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ABSTRACT

Early Childhood Research and Practice (ECRP), a peer-reviewed, Internet-only journal sponsored by the ERIC Clearinghouse on Elementary and Early Childhood Education (ERIC/EECE), covers topics related to the development, care, and education of children from birth to approximately age 8. The journal emphasizes articles reporting on practice-related research and on issues related to practice, parent participation, and policy. Also included are articles and essays that present opinions and reflections. The first part of this issue of ECRP contains the following major articles on research and practice: (1) "A Trip to the Zoo: Children's Words and Photographs" (Darlene DeMarie); (2) "Locatives and Visuomotor Skills in the Kindergarten Year" (Deborah Marr, Mary-Margaret Windsor, and Sharon Cermak); and (3) "Teachers' Beliefs and Teaching Beliefs" (James Raths). The second part presents the following observations and reflections: (1) "Clouds Come from New Hampshire": Confronting the Challenge of Philosophical Change in Early Childhood Programs" (Ellen P. Dodge, Barbara N. Dulik, and John A Kulhanek); (2) "Reactions to Visiting the Infant-Toddler and Preschool Centers in Reggio Emilia, Italy" (Tess Bennett); and (3) "Reflections and Impressions from Reggio Emilia: 'It's Not about Art!'" (Nancy B. Herzog). An additional feature article focuses on the Project Approach, "The Combine Project: An Experience in a Dual-Language Classroom" (Rebecca Wilson). The journal concludes with a recent ERIC database search on the Reggio Emilia Approach, and a description of new ERIC/EECE publications and activities, along with general information and links related to the journal. (HTH)

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an Internet journal on the development, care, and education of young children

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A Trip to the Zoo: Children's Words and Photographs

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University of South Florida

Abstract

Field trips are a regular part of many programs for young children. Field trips can serve a variety of purposes, such as exposing children to new things or helping children to see familiar things in new ways. The purpose of this study was to learn the meaning children gave to a field trip. Cameras were made available to each of the children in a group of 3- to 12-year-olds ($n = 21$) from a campus child care center. It was suggested to them that they take pictures during the field trip to show other children, who were unable to go on the trip, what the zoo was like. Trips to the zoo were not a regular part of the center's program. The results revealed that over 80% of 6- to 12-year-olds' photographs contained animals. Older children noticed and learned new features of familiar animals and about new, unfamiliar animals. Only the 10- to 12-year-olds indicated that they understood abstract concepts such as the need to preserve animals. On the other hand, with one exception, only 56% of the preschool children's photographs contained animals, and they photographed only familiar animals, including chipmunks. They photographed action (e.g., swimming, petting). Young children also photographed the clouds, ground, and other items not uniquely associated with the zoo. The results were interpreted in light of Farrar and Goodman's Schema-Conformation Deployment Model. Preschool children seem to need more than one exposure to unfamiliar phenomena to notice and to remember them.

Introduction

Field trips are a regular feature of many preschool and school-age child care programs. A field trip can be as simple as a walk around the block, or it can be as complicated as a bus trip to a distant place. Children may be asked to look at what they normally see with new eyes, or they may have the opportunity to see things to which they have not been previously exposed. Ideas about the purposes of taking field trips are as varied as the types of early childhood programs that exist.

Our child care center was located within an academic building of a small, liberal arts college situated in rural, east central Ohio. The summer child care program featured weekly field trips tied to thematic units. Sometimes children visited a neighborhood business, the fire station, or another place within walking distance of the center. Sometimes the places visited required a long drive to make it possible for the children to see things not usually seen in their everyday environment; these required a full-day trip. We wondered what our children thought was important about those field trips and whether the time, expense, and anxiety we felt when taking the long trips were worth it. The center maintained a 1:3 adult/child ratio for these long excursions, thus incurring substantial costs. Fears mounted as we heard of children being abducted from large city places. So one question underlying this research was whether all the stress involved in taking these field trips was offset by their educational benefits to children.

Some early childhood programs, especially those for children identified as "at-risk," view their mission as one of exposing children to things that are not typically a part of their everyday environment. Other programs such as those in Reggio Emilia, Italy, encourage children to focus on topics that are of interest to them (see Edwards, Gandini, & Forman, 1998). Loris Malaguzzi (1998) said, "the teachers need only to observe and listen to the children, as they continuously suggest to us what interests them, and what they would like to explore in a deeper way" (p. 90). According to Katz and Chard (1994), it is important for young children to be "engaged in ways that deepen their understanding of their own experiences and environment" (p. 4). They further state that "a major aim of education is to improve the learners' understanding of the world around them and to strengthen their dispositions to go on learning" (p. 5). If children take a field trip to an unfamiliar place, will they notice and remember what was there?

How can we discover what young children think is important about a field trip? We can ask them. However, young children are not as skilled as older children in using words to communicate what they think (Miller, 1993). Verbal reports may or may not accurately reflect children's event knowledge (Hudson, Fivush, & Kuebli, 1992; Nelson, 1997). One approach to the question seemed to be to record the events of a field trip through the eyes of children. During the process, we also learned an important lesson about elements of a field trip that captured 3- to 12-year-old children's attention and interest.

We gave the children cameras with instructions to take pictures so other children would know what the trip was like. Judy DeLoache's research (DeLoache & Marzolf, 1992; Troseth & DeLoache, 1998) supports the premise that by 2-1/2 years of age, children understand the symbol referent nature of photographs. Therefore, it can be assumed that even preschool children would understand that their photographs represented the actual place—in this case, the zoo.

The Study: A Field Trip to the Zoo

During the week of July 4, the children who were enrolled in our center went on a field trip to the Columbus Zoo. Because it took more than 1-1/2 hours to get to the zoo from the center, we left the center by 8:00 a.m. and returned at approximately 5:30 p.m. Because the children lived in a rural area and did not go to the zoo regularly, with their parents' assistance it was possible to quantify exactly how many times each child had been to the zoo. All 21 children who went on this trip had been to the zoo at least one time before this particular trip, but only 5 of them had been to the zoo more than seven times.

The week of the zoo trip, the teachers talked about the zoo with their classes, and they showed the children pictures of the animals they would be seeing. Activities for the preschool children focused on the different zoo animals. This type of thematic unit was typical of the curriculum that was offered for our children.

Approximately half of the 49 children who were enrolled in the summer program during the month of July were scheduled to go on the field trip to the zoo; the other half were not scheduled to attend the center that particular week. On the basis of age and previous zoo experience, a group of children who did not go to the zoo was matched as closely as possible to the group who went to the zoo. Illnesses and other last-minute trip cancellations changed the one-to-one matching. However, the differences between the two groups ($n = 21$ and $n = 28$) in mean age and mean number of previous trips to the zoo were not significantly different. The staff also did not think the groups differed with respect to family characteristics such as socioeconomic status or other demographic factors.

The week before and the week following the field trip, all 49 children were interviewed about what usually happens when they go to the zoo. (Appendix A contains the actual interview questions.) Thus, there was a type of control group for the verbal measures collected in the study. Furthermore, analyses could be computed with age and experience as independent continuous variables.

The results of children's verbal descriptions of the zoo (i.e., scripts; see Nelson, 1986) are reported elsewhere (DeMarie, Norman, & Abshier, 2000). These results included all 49 children. Briefly, either children's age or previous experience at the zoo (each controlling for one another in multiple regression analyses) predicted their use of general (i.e., "we" or "you") as opposed to first person (i.e., "I") pronouns and the use of present as opposed to past tense. For example, as expected on the basis of previous research, they said, "You see lions" rather than "I saw a lion" (see Kuebli & Fivush, 1994). Only the number of previous visits to the zoo by the child (experience) predicted the quantity of information the child stated, as measured by the number of propositions he/she said. The number of times children had been to the zoo was significantly correlated ($r = .60$, $p < .001$) with how much they said about the zoo during their interview. Only children's age predicted the number of animals they mentioned when they were asked to name as many zoo animals as possible (and all of the animals children mentioned during the entire interview were counted). However, both age and experience jointly influenced (i.e., there was a significant interaction between age and experience) the complexity of the language children used, as measured by the number of optionals (either X or Y) and conditionals (if X, then Y) they stated. These results revealed that age and experience affect different measures of children's verbal reports.

Although the number of previous trips to the zoo was significantly correlated with the number of books children owned about the zoo ($r = .30$, $p < .05$), and the parents' estimates of their children's knowledge about the zoo ($r = .51$, $p < .001$), it was not significantly correlated with parents' ratings of children's interest in the zoo ($r = .11$, $p > .10$). In other words, the more times children had been to the zoo, the more books they owned about the zoo and the more knowledgeable their parents thought they were about the zoo. Yet, neither how many times they had been to the zoo nor the number of books they owned related to parents' estimates of children's interest in the zoo. Perhaps parents take their children to the zoo for reasons other than whether they think their child is "extremely interested" in it.

Children who went to the zoo during our field trip (*n* = 21) did not differ significantly on any verbal measure from children who did not go to the zoo (*n* = 28). It was surprising that children who went to the zoo did not mention significantly more animals after going to the zoo than they had before going to the zoo. In addition, the number of animals these children mentioned did not differ significantly from the children who had not gone to the zoo. The only significant predictor of how many animals children mentioned was the age of the child. Experience was not a significant predictor controlling for age.

This article focuses on the nature of the photographs taken by children who went to the zoo and what they said about them. These results of the study may be useful to early childhood professionals when deciding which field trips to take with children of different ages. Fortunately, presentation of the study in an online journal makes it possible to view the children's photographs.

Method

Participants

Every parent who was contacted gave his or her child permission to participate in the study. Unless otherwise noted, the statistics that follow in this section are summarized for all 49 children.

Questionnaires (see Appendix B) were sent to parents asking about their children's previous experience, knowledge, and interest in the zoo. The means (and standard deviations) that follow summarize parents' answers to some of these questions. Children had been to the zoo 4.82 times (SD = 3.82). The five children who had been to the zoo more than seven times had all moved to the area from a larger city. Nearly 30% of the children had been to the zoo two or three times, 19% of them had been to the zoo five times, and 17% of them had been to the zoo only once. There was a moderate correlation ($r = .34, p < .05$) between age and the number of previous zoo trips for our 3- to 12-year-olds, and some younger children had been to the zoo more times than many older children. The majority of children (62%) visited the zoo for the first time before the age of 3 (M = 2.42 years at the time of the first visit, SD = 1.41).

Parents reported that children owned 3.86 books about the zoo (SD = 3.43), and parents estimated they read 8.25 books about the zoo to their child (SD = 7.01). Only one child's parents said he was "somewhat interested" in the zoo. The rest claimed children were "very" or "extremely" interested in it.

Parents also responded to questions about their child's previous experience with cameras and how frequently their family took and reviewed photographs. Appendix C contains a copy of this questionnaire. Every child's parent reported that family photographs were shared with the children often or quite often. All but one of the children's parents reported that their child had taken photographs with the family's camera, and nearly 50% of the children owned their own cameras.

The classification of the groups for the analysis of photographs was as follows:

preschool: ages 3 to 5 and not yet in kindergarten ($n = 6$); early primary: kindergarten to second grade or ages 6 to 8 ($n = 8$); late primary/early middle school: third to sixth grade or ages 9 to 12 ($n = 7$).

Materials

A grant from the Ohio Association for the Education of Young Children made possible the purchase of 24 pocket Instamatic cameras, pouches that fastened around children's waists, a 24-exposure roll of film for each child, cassette tapes and videotapes for recording the day's events, and film development. Each teacher carried a cassette tape recorder in a pouch so conversations with children could be recorded during the field trip. The interviews of the children were also tape recorded and were later transcribed.

Procedure

One week before and/or one week following the field trip, all 49 children were interviewed individually about what happens when they go to the zoo. Before leaving the center on the day of the zoo trip, all children were taught how to hold the camera and how to take a photograph. For practice, children were asked to take a picture of their favorite person in the room. Then the cameras and pouches were collected for the long van ride to the zoo.

When the children received their cameras and pouches at the zoo, they were informed that "many children weren't able to come to the zoo with us" and that we wanted them to take photographs "so these other children will know what the zoo is like." The whole group of children and adults from the center stayed together throughout the entire field trip. Although remaining as a group, each adult was responsible for two to four children, depending on the children's ages and tendency to wander.

Following their post-zoo interview the week after the field trip, the children who went to the zoo with the center were interviewed about the photographs they took at the zoo and why each of them was taken. They were asked questions such as, "What was the most important thing you learned about the zoo?" and other questions about their experiences (see Appendix D).

A Columbus Zoo expert determined which photographs contained animals and which did not. His familiarity with the zoo exhibits enabled him to locate animals in photographs that others had missed. The percentage of a child's photographs that contained animals was calculated for each child.

Results and Discussion

The results reported below are based on data collected from the 21 children who went to the zoo. First, the person whom the children photographed when they were all taught how to use the camera is reported. Then, the photographs children took at the zoo are analyzed. A summary and some representative photographs from the 9- to 12-year-olds are provided first, because their photographs were similar to ones adults would have taken of the zoo. Next, the words and photographs of the 6- to 8-year-old children are analyzed. Although they did not mention abstract concepts such as "preservation of animals," as was true for the 9- to 12-year-olds, most of the 6- to 8-year-olds' photographs contained animals. They took many pictures that showed unusual examples of animals they knew or new animals about which they learned something. Finally, some representative photographs and words from the 3- to 5-year-old children are shared. What the preschool children photographed had little to do with the main theme of the field trip, namely, visiting animals at the zoo. What they chose to photograph at the zoo was not much different from what they could have photographed at a local farm or a walk around the block. When photographing an animal, they focused on the common, familiar ones. Finally, the children's answers to the question "What was the most important thing you learned at the zoo?" are discussed.

Favorite Person in the Room

When children were asked to take a photograph of their favorite person in the room before leaving the center, it was interesting that all the preschool children (ages 3 to 5) took a photograph of their lead teacher. The early primary (ages 6 to 8) and 9-year-old children took photographs of any one of their three teachers (one lead teacher/two assistants), the director of the center, or a research assistant. All of the 10- to 12-year-olds took photographs of a peer. The most surprising finding was that no child took a picture of a parent. Was it because children saw other children taking pictures of teachers, or was it because the teacher is the most important person in the context of an institutional child care center? When later asked why they had taken that particular picture, even the preschool children said that they were taking a picture of their favorite person in the room. Many of those same children did not later give reasons for taking any of the other photographs they took at the zoo.

Photographs and Words of Children Who Were 9 to 12 Years Old

More than 86% (range = 80% to 94%) of the oldest children's photographs contained animals. Their pictures looked like those an adult might have taken. For example, the photograph of zebras and giraffes in Figure 1 was taken by the oldest girl in the group, who was 12 years, 11 months old. She had been to the zoo eight times before this trip.

*Figure 1. **Photograph of zebras and giraffes by 12-year-old.***

When asked why she took this picture, she said, "Because I like 'em. . . and it was a neat picture because I got both of the giraffes and both of the zebras."

Some of the oldest children's photographs contained friends. For example, a girl who was 10 years, 1 month old and had been to the zoo four previous times explained that she took a photograph of her friends petting a goat because they were "begging me to take a photograph of them petting the goats."

The oldest children took the role of the other children who would be looking at their photographs and often teamed up to get a greater number of different photographs. They said they tried to take photographs of animals they knew others liked. A boy age 11 years, 7 months said he teamed up with his sister, who was 9 years, 5 months old. Both had been to the zoo three times before this trip. The boy said, "Me and my sister were working together." They tried to have photographs of as many different animals as possible. Whenever one took a photograph of an animal, the other one would not. Teaming up and collaboration were prevalent within the oldest group of children.

The oldest children also related the new information they learned to information they already knew from previous trips to the zoo, books they read, or information they learned at school. For example, when the boy who took this photograph of a bald eagle (see Figure 2) was asked about the photograph and why he had taken it, he said, "I think that's where I tried to get the bald eagle, and I got that because I thought I'd try to get a picture of our national bird."

Figure 2. ***Photograph of a bald eagle by 11-year-old.***

A girl who was 9 years, 6 months old and had been to the zoo three times said that she had taken a picture of an elephant because, "in third grade we were studying elephants, because each classroom had an endangered animal that they had to study." When asked about her picture of the giraffe, that same girl said, "I like their tongues and how they're so long. I read a book once that said their tongue's a foot long."

The oldest children remembered the names of new animals and often reported facts about those animals. For example, a girl who was 11 years, 1 month old took a photograph of red pandas (see Figure 3). She also had been to the zoo on three previous occasions. She said, "This is a Chinese Panda. They kind of look like raccoons, and I thought they are unusual."

Figure 3. Photograph of red pandas by 11-year-old.

Older children also talked about preserving animals. For example, the boy age 11 years, 7 months said, "I think it's very important to save endangered animals because we could lose them forever, and it could really destroy the food chain."

To summarize, the oldest children retained a lot of new information about the zoo. Perhaps that was because they tried to relate the new information to what they already knew. Elaboration of new information with what someone already knows is an excellent memory strategy (see Kail, 1990). They collaborated with one another to take a greater number of different photographs and did some role taking of what another child would like to see or to learn. Nearly all of their photographs contained animals, and they understood that zoos helped to keep animals from becoming extinct. Older children's learning definitely revolved around the theme of the zoo.

Photographs and Words of Early Primary Children Who Were 6 to 8 Years Old

As was the case for the oldest children, nearly all (85%, range = 71% to 97%) of the early primary children's photographs contained animals. In one exception, only 53% of one 6-year-old child's photographs contained animals. The early primary children's photographs contained both common and uncommon examples of animals. For example, the photograph of a common snake in Figure 4 was taken by a boy who was 7 years, 9 months old. He had been to the zoo five times before this particular trip.

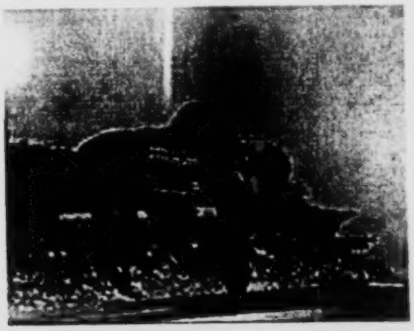

Figure 4. Photograph of a brown snake by 7-year-old.

The boy who took this photograph said, "It's another snake in the reptile house. . . . I took that picture because the snake looked so long. And I thought [my mother] wouldn't believe it." As was evident in this boy's remarks, some children in this age group also thought about what others would think or would expect to see in their photographs. They often mentioned an unusual feature of what they captured on film.

A girl who was 6 years, 10 months old and had made four previous visits to zoos took a picture of the reindeer at the petting zoo (see Figure 5). She said she took the picture because the reindeer had "fuzzy antlers."

Figure 5. Photograph of a reindeer by 6-year-old.

As was true for the oldest children, the 6- to 8-year-olds also mentioned some unusual feature of the animals they captured in their photographs. It is noteworthy that this child backed up to take the entire animal at the petting zoo. The youngest group of children usually did not do so.

A boy who was 8 years, 11 months of age and had been to the zoo six times took a picture of a bright green snake (see Figure 6). He said he took the picture, "'Cause I like snakes, and that one was neat." When asked what made the snake neat, he replied, "That color and the shed skin."

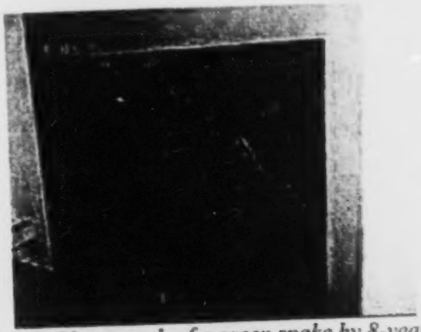

Figure 6. Photograph of a green snake by 8-year-old.

In summary, children who were 6 to 8 years old also took photographs primarily of animals. They captured both common and more unusual examples of animals and usually mentioned what feature of the animal's appearance was uncommon. They thought about what other people would enjoy seeing and noted things they learned at the zoo. As was true for the oldest children, their learning was related to the zoo theme.

Photographs and Words of Preschool Children Who Were 3 to 5 Years Old

With the exception of one 5-year-old girl who had been to the zoo ten times (83% of her photographs contained animals), only 56% of the other preschool children's photographs contained animals (range = 50% to 59%). Chipmunks and parts of animals (e.g., necks or rear sections of goats) were counted as animals in that percentage. Preschool children treated the camera as a way to get a closer look at something, and they preferred to capture action in their photographs rather than photographing unusual animals or unusual features of animals. For example, a boy age 3 years, 10 months, who had been to the zoo only once before this trip, captured turtles on film (see Figure 7) and said, "There's a turtle." No child older than 9 years took a photograph of turtles in this particular exhibit. When he was asked why he had taken the picture of a turtle, he said, "I wanted to see him swimming in water." His remarks indicated that he could view the action of swimming through the lens of the camera. Preschool children enjoyed common events focused on action and seemed to treat the camera like a set of binoculars for looking at things.

Figure 7. Photograph of swimming turtles by 3-year-old.

The photograph of the turtles swimming was one of the best-quality animal photographs taken by any preschool child. Because many children did not stop when taking photographs, many of their photographs were action shots. It was surprising that the subject could be identified. There was not a significant correlation between age and the number of photographs that could be identified by adults.

A girl who was 5 years, 7 months old and had been to the zoo ten previous times took a picture of goldfish (see Figure 8). When asked why she took that picture, she said, "Because I wanted to see a picture of the goldfish." Perhaps she realized that she would be able to see her pictures after returning from the zoo.

Figure 8. Photograph of goldfish by 5-year-old.

In addition to seeing the animal's actions, the young children's own actions were very important to them. In fact, their pictures at the petting zoo often contained only part of a goat—whichever part they happened to be petting. The child's hand was even visible in some photographs, such as Figure 9, taken by a girl who was 3 years, 5 months of age.

She had been to the zoo once, and she was petting the goat and snapping the picture simultaneously.

Figure 9. Photograph of goat's neck by 3-year-old.

When asked about the picture, she said only, "Goat." She did not say why she took the picture.

A boy who was 3 years, 2 months old and had been to the zoo on five previous occasions also captured only part of a goat in his picture. He captured the backside of the goat, which was where he was petting it. To these youngest children, petting was important. It was interesting that no preschool children took a photograph of any other animal than a goat at the petting zoo. They were attracted to the animals they already knew. In rural, east central Ohio, many children have goats, so these animals are very familiar to them.

This boy also photographed different goats' necks and heads without their bodies. One of his pictures contained the entire goat, and that goat had its backside toward the camera. When asked to tell about each picture, he said, "Goats." He did not say why he took any of the photographs. He also took three different photographs of his teacher, and he was able to center the camera sufficiently to capture her entire face. He took one photograph of another boy that had the boy's entire face, head, and shoulders in it. Therefore, the reason for photographing only the necks of goats was not simply lack of ability to center the camera.

Preschool children were attracted to large, shiny objects. When we passed the fountain near the entrance, some of the 8- to 10-year-olds took pictures of the swan or geese there. This same preschool boy took a photograph of the big, gold ball on top of the fountain (see Figure 10). He said only, "Fountain."

Figure 10. Photograph of gold ball on fountain by 3-year-old.

Another boy who was 3 years, 10 months old and had been to the zoo once took a picture of the "big ship" sign on top of a building (see Figure 11). He said, "I like the picture."

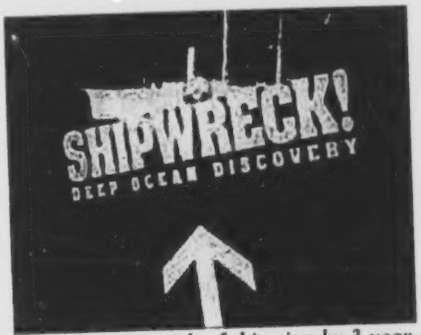

Figure 11. Photograph of ship sign by 3-year-old.

It is noteworthy that this ship sign was on top of a building we had never entered. The boy was so excited about the sign that he later told me it was like a "big ship" he had "seen before."

A girl who was 3 years, 5 months old and had been to the zoo once took a picture of the clouds (see Figure 12). She did not say anything interpretable about her picture.

Figure 12. Photograph of clouds by 3-year-old.

More than one preschool child took a picture of one girl's pink tennis shoes. The photograph in Figure 13 was taken by a boy who was 4 years, 9 months old and had been to the zoo only once before this trip. He said the name of the girl when asked about that picture.

Figure 13. Photograph of girl's pink tennis shoes by 4-year-old.

Two other children also took pictures of this girl's pink tennis shoes. In fact, every child younger than 5 years took at least one photograph of children's legs while walking. Walking was a significant part of their field trip day.

Preschool children did not confine their photography to taking pictures of zoo animals. They also photographed many common animals you would find when walking in a neighborhood. Whereas older children only photographed animals that are seen at the zoo exclusively, preschool children were more likely to photograph animals they had seen outside of the zoo environment. These were the animals that they were attracted to viewing and photographing, and these were the animals they remembered and described during their interviews later. Seeing a chipmunk was as exciting as seeing an elephant (see Figure 14).

Figure 14. Photograph of a chipmunk by 3-year-old.

The boy who took the photograph of the chipmunk , who was 3 years, 10 months old and had been to the zoo once, said, "That was where we were looking for a chipmunk." Actually, he had been chasing the chipmunk and finally took its picture when it went under the table. Perhaps the boy meant that he was looking for the chipmunk in the camera and finally had it in view.

Common, mundane things in preschool children's environment were important to them. A crack on the sidewalk was a reason for celebration. Their picture taking was certainly not confined to animals. The photograph of the ground (see Figure 15) was taken by a 5-year-old child. He had been to the zoo five times prior to this field trip.

Figure 15. Photograph of the ground by 5-year-old.

This boy said, "This time I took the ground. That's in case you know where the ground was." Although an adult may have labeled this picture "unidentifiable," it was clearly identifiable to this child. This boy took two different photographs of the ground, and another boy age 3 years, 2 months captured a footprint on the ground. He also knew its identity and said, "A footprint" in his follow-up interview.

To summarize, preschool children photographed common, familiar examples of animals rather than zoo animals that were less familiar. Preschoolers were drawn to action. For example, they photographed petting a goat or moving things. What an adult may have considered mundane (e.g., ground) was interesting to preschool children. Preschool children thought things like the footprints or legs were worthy of being photographed so others could see them.

Age Was a Better Predictor than Experience of the Content of Photographs

A multiple regression analysis was computed on the percentage of photographs that contained animals, with age and number of previous zoo trips (experience) as continuous variables. Age was a significant predictor, $t(19) = 3.68$, $p = .002$, of the percentage of photographs children took that contained animals controlling for experience, but experience was not significant controlling for age. Age explained 39% of the variation in the percentages uniquely. Experience did not explain any further variation in percentages. Thus, regardless of how many times they had been to the zoo, older children photographed more animals, and younger children created more scenery or people pictures that did not contain any animals.

What Did Children Say They Learned about the Zoo?

Children were asked, "What was the most important thing you learned about the zoo?" They were prompted with questions such as, "What was the most important thing you learned about zoo animals?" and "Did you learn anything else?" (Appendix D contains the actual zoo interview.) All 21 children's responses to the questions are summarized below so that the reader can assess the meaning children gave to what they thought was the most important thing they learned about the zoo.

The 3-year-olds did not say anything interpretable. The child who was 4 years, 9 months said, "Not to talk to strangers and not to feed the animals and not to pet them because they bite and not to throw rocks at them and not to kick them." He later added, "You can pet the big black thing 'cause it doesn't bite and the red-head bird." When asked more specifically about the most important thing he learned about zoo animals, he said, "Don't let the trucks run over you and not to talk to strangers and all that stuff." This boy clearly learned a lot of precautions, but the theme of the zoo was not evident in what he said he learned.

Two other children who were 5 years old could not articulate what they learned. However, a child who was 5 years, 9 months old said, "Seeing all the animals" was the most important thing she learned. When prompted why, she said, "Because seeing all the animals makes everybody know what all the animals are about." When asked to discuss the most important thing she learned about zoo animals, she said, "We didn't learn anything important."

The four 6-year-old children and one 7-year-old also missed the zoo theme. Three said they did not know what they learned, one said something about animals biting, and one told about not getting lost at the zoo. Prohibitions related to safety were considered important learning to them. The boy who was 7 years, 9 months old said, "That the zoo is supposed to be a special place. Fun for all." He went on to explain, "'Cause the zoo is supposed to be a place where you have a lot of fun watching the animals." When asked to discuss the most important thing he learned about zoo animals, he said, "That animals are special and deserve our respect." He had been to the zoo five times previously.

The 8-year-old said he learned that the zoo was big and that the animals look neat. The three children who were 9 years old told some fact they learned. The boy age 9 years, 3 months said that the animals were "pretty amusing to watch and see what they do." A girl who was 9 years, 5 months old said, "I learned that water animals have to be under water or they could die. Elephants and giraffes need to be kept in cages. I observed so carefully 'cause I think I might want to be a zoo keeper when I grow up and you gotta take really good care of the animals." Another girl who was 9 years, 6 months old talked about the trolley man, saying that he "has to drive real slow because a couple of the elephants get real mad and they start running around their cages."

The 10- and 11-year-old girls claimed that they learned "how they treat the animals" and "that animals are important." The second girl elaborated, "If you keep killing the animals then there won't be any left." She also said, "That [animals] need care."

The 11-year-old boy probably had the answer that every teacher would have liked every child to say. He said, "Animals are endangered and need help to return to the wild." He elaborated, "Because I think it's very important to save endangered animals. Because we could lose them forever, and it could really destroy the food chain." When asked to discuss the most important thing he learned about zoo animals, he said, "Probably that they've adapted to their new surroundings."

Finally, the 12-year-old talked about the animals' diets and said she learned "they're on special diets. And you can't feed 'em . . . popcorn or peanuts, to the elephants 'cause it'll hurt 'em. . . ." Although she also spoke of prohibitions, as did younger children, she linked prohibitions to reasons: that animals were on special diets.

In summary, most children younger than 6 did not answer the question, and many children younger than 9 stated things you should not do when you go to the zoo. The 8- and 9-year-olds appreciated seeing the animals, and they learned something about animals that they were able to state. The larger, more abstract issues (e.g., preservation of animals) were only evident in the 10- to 12-year-old children's responses.

General Discussion

The photographs and children's own comments about them, and children's reports about what they learned from going to the zoo, all reveal important information about what children of different ages noticed and remembered about this field trip. For the 9- to 12-year-old children, it is evident that going to a distant zoo was an appropriate way to learn about things not ordinarily a part of the children's environment. These children understood the larger purpose of zoos, and they learned new labels and information about each animal's diet, habitat, etc. Not one child mentioned the long bus ride or long periods of walking. If they mentioned prohibitions, it was in the context of what was best for animals rather than simply in the context of what they were not permitted to do. As would be expected, older children were more peer oriented and displayed greater perspective-taking skills (see Flavell, 1992).

The 6- to 8-year-old children also seemed to benefit from this trip to the zoo. They retained some new information about animals, learned some new labels for animals, and noticed unique features of common animals they knew prior to visiting the zoo. In fact, many were attracted to uncommon examples of animals they had known. They enjoyed watching animals more closely and noticed things they had read in books or had heard previously.

Although these children did not report the more abstract concepts (e.g., the need for protecting and preserving animal species), they learned a great deal that seemed to make this particular trip worthwhile. They probably would benefit from any field trip where they could learn or encounter unusual examples of things they already know.

What the preschool children noticed, photographed, and said about the zoo had little to do with what an adult would consider the actual point of visiting the zoo. What they noticed and remembered was anything they saw that was an example of something they already knew. Whether the event was theme related or not mattered little to them. Taking photographs of the ground, a girl's pink tennis shoes, or the clouds was just as important as taking photographs of turtles, snakes, or goats. Preschool children's animal photographs all focused on common examples of animals. They did not take or notice any unique animals or unusual features of common animals. The ordinary was valued over the extraordinary. Chipmunks and goats are both plentiful in their home environments, and these animals were photographed and were more memorable to them than the unfamiliar reindeers or gorillas.

In developmental research on children's event representations, Farrar and Goodman (1990, 1992) proposed the Schema Confirmation-Deployment Model to explain how young children typically encode events and later report them. Across multiple visits, they exposed children to one or three events that had a common structure and then one deviation event that was very different from the others. Farrar and Goodman claimed that young children (i.e., 4-year-olds in their study) remembered events that were most like the other familiar events they experienced. They did not remember the event that was too different from the ordinary events they experienced. In fact, being exposed to both types of events only once impaired young children's memory for each of these events when compared with a control group of children who only experienced a single event. However, older children (i.e., 7-year-olds in their study) were able to learn and to retain the familiar events more rapidly so that they began to notice and also to remember the unusual event. Perhaps at the zoo, our preschool children were only searching for experiences that were like what they already knew. However, by 6 to 8 years of age, children began to search for and to remember unusual aspects of their experience.

If preschool children are likely to search for and to remember events that are common experiences, what implication might that have for the type of field trips we offer them? It may be just as memorable for children to take a walk around the block as it is to go to far off, unfamiliar places. Our preschool children wanted to see, photograph, and describe things they already knew. These things were what they photographed and remembered. They hardly noticed the unfamiliar, and they were not able to name more animals after going than they could before going to the zoo. This finding was not surprising given Farrar and Goodman's results.

Lilian Katz (1995) said, "Our major responsibility is to help the young to improve, extend, refine, develop, and deepen their own understandings of constructions of their own worlds" (p. 6). She suggested that the younger the child, the more important it is to offer a curriculum that has horizontal rather than vertical relevance (i.e., curriculum that is useful for the next grade). Curriculum that has horizontal relevance offers children opportunities to know and be able to do things that are, in her words, "applicable and meaningful to them on the same day, on the way home, and in their contemporary lives outside of the educational setting" (p. 112).

The camera seemed to be a way for some preschool children to look more closely at things they would find in their familiar environments. Two preschool children mentioned taking a picture to see something (e.g., the turtles swimming). They treated the camera like binoculars. It would be interesting to give preschool children cameras when they walk around the block to see if their photographs are similar to the ones our children took at the zoo. Though they would not encounter goats to pet, they could see clouds, chipmunks, and the ground. Petting a friendly dog might easily substitute for petting a goat.

The preschool children in the present study took many photographs that captured action, including many photographs of legs walking. Some pictures were taken while the animals were "on the run" (e.g., the chipmunk running under a table). The goat was photo-worthy to preschool children, but the unfamiliar reindeer was not. (Perhaps the reindeer would have become more important at Christmas time.) The action of petting seemed to be more important to them than capturing the entire goat in their photographs. They photographed whichever part of the goat they happened to be petting. The turtle was important because it was swimming.

This finding supports the implications of Piaget's theory for educating children. Piaget proposed that children's cognitive development undergoes four stages. During infancy, children are in the sensorimotor stage, during which they only know what they can act upon. Sometime around their second birthday, children begin to form mental representations, and they enter the preoperational stage. Young children can now use representations as ways to know. Next, children move to the concrete operational stage, during which time children become capable of operational thinking and can master academic skills, but only on what has been experienced previously. Finally, in adolescence, thinking moves to the formal operational stage, during which time children become capable of abstract, hypothetical thinking. According to Berk (2000), in a Piagetian classroom, young children are given lots of opportunities to act upon their world and to explore and to discover for themselves. The younger the child, the more important concrete experiences are. Following this thinking, field trips that involve opportunities for children to touch as well as see, hear, taste, and smell are especially important during the early years. Opportunities to represent the learning by drawings, dramatic play, and other forms of representation would enhance children's learning during the preschool years, and children would not be expected to master abstract concepts before they reached the formal operational stage. Our results confirmed that only the oldest children (i.e., the 10- to 12-year-olds) remembered and stated more abstract concepts about the zoo.

More recently, Piaget's stage concept has been criticized. Young children are more capable than Piaget thought (see Siegler, 1998), and children's thinking is not as consistent across different domains or areas of study as Piaget thought. For example, in solving problems, whether or not the context is a familiar one and how many previous experiences young children have had with similar problems both influence the problem-solving strategies they use in a particular situation. Children reason at higher levels when the context is familiar to them. Siegler (1998) notes that young children's learning can be accelerated. Yet, he also suggests that "although young children can learn to solve . . . problems, they often find doing so exceptionally difficult. Older children who cannot yet solve the same problems typically learn them much more easily" (p. 58). It is evident then that multiple experiences probably would be necessary for young children to learn concepts that are not a part of their normal, everyday experiences. Teachers need to weigh their priorities in deciding what to offer children in the curriculum. If they want children to learn concepts that are outside their normal, everyday world, then repeated experiences and much more time would be necessary.

How many zoo experiences would a preschool child from a rural area need to have to begin to notice and to remember new, unfamiliar animals at the zoo? One of our 5-year-old children had been to the zoo ten times. Although she did photograph more animals than any other preschool child (i.e., whereas only 56% of their photographs contained animals, 83% of her photographs contained animals), it is noteworthy that her photographs had more in common with the other preschool children's than with three of the oldest children's (two 9-year-olds and one 11-year-old) who had been to the zoo only three times. Whereas she photographed turtles, goldfish, a pony, and goats, the older children photographed many new animals (e.g., red pandas) and told what they learned about them. Our preschool child did say that seeing animals was important. How many zoo experiences would it take for her to remember and to report information adults would consider unique about the zoo? Is that an important goal for preschool children? Should we wait until children are older to take them to very unfamiliar places, or was there other learning that was not assessed in the present study?

American educators marvel at the level of thinking reflected in the children's work displayed in Reggio Emilia, Italy. These children have had repeated firsthand experiences exploring a topic actively. Their thinking about the topic is at a higher level than what Piaget would have predicted was possible for young children. Yet, if one carefully reads the documentation from the beginning of projects, one sees the type of fanciful thinking one would expect from preoperational children. It is only through the process of repeated investigations and using many different languages to represent their learning (see Edwards, Gandini, & Forman, 1998) that these children begin to see the world differently and to attain higher levels of thinking about the topic. It also should be noted that topics teachers select are of great interest to the small groups of children who investigate them from the beginning. What photographs would their children choose to take when they went on a field trip to investigate a topic of interest to them?

The present study's thematic unit was undertaken before the director of the center and I attended Lilian Katz and Sylvia Chard's summer institute on the Project Approach. It also occurred before I visited the early childhood programs in Reggio Emilia, Italy, on two occasions, and it was before I visited several programs adapting the Reggio Emilia approach in the United States. In retrospect, this particular thematic unit on the zoo was superficial when compared with the in-depth studies of topics that our center's children undertook in the years that followed those experiences. Perhaps the way the thematic unit was approached was responsible for the way children viewed the zoo.

Caveats

It is possible that the verbal and nonverbal measures used in the present study did not capture the actual learning of the preschool children. Perhaps children's photographs would not be an adequate representation of what they thought was most important about the field trip to the zoo. There may be other long-term benefits of exposing children to unfamiliar events during the preschool years that were not assessed in the present study. Perhaps the topic—the zoo—was too broad, and narrowing the topic considerably would have enhanced young children's learning.

Despite the above caveats, other observations caused us to wonder whether our preschool children's time would have been better spent going on field trips closer to home. They had spent over 3-1/2 hours in vans traveling to and from the zoo. They walked for what seemed to them to be endless hours. At the end of the day, many children were very tired and slept on the way home.

Although one study cannot definitively answer our question, "Was the learning worth the time, money, and anxiety?" we do need to conduct additional research to shed light on what children in early childhood programs think is important about the field trips we provide for them. After all, 9 hours is a larger part of a 3-year-old's life than it is of an adult's life. We need to make the most of every hour we have with our children and choose the topics of study and field trips with the greatest of care. Viewing children's words and photographs provided only one possible snapshot of children's experience on a field trip to the zoo, but it did raise some important questions to ponder.

Acknowledgments

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Appendix A

Interview about the Zoo Conducted with All Children

Child's Name:
Date:
Child's Age:
Birthdate:

I would like to see what kids your age think about the zoo.

- Have you been to the
    - Columbus Zoo?
    - Cincinnati Zoo?
    - Cleveland Zoo?
    - Toledo Zoo?
    - National Zoo in Washington, DC?
    - Any other zoo?
    - How many times have you been to a zoo like these all together? 0 1 2 3 4 5 6 7 8 9

- How much do you like the zoo?
    - A lot
    - A little
    - Not Much
    - Not at All

- How much do you know about the zoo?
    - A lot
    - A little
    - Not Much
    - Not at All

- What does Zoo mean to you?
- Tell me about the zoo.
- What happens when you go to the zoo?
    - Does anything else happen?
- What do you see when you go to the zoo?
    - Do you see anything else?
    - What else do you see?
- Is there anything else you would like to tell me about the zoo?
- Tell me as many zoo animals as you can.
    - Can you think of any more zoo animals?

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Appendix B

Parent Questionnaire about Their Child's Experience at the Zoo*

Please return this survey to Peggy Murphy, Center for Child Development, Muskingum College, New Concord, OH 43762-1199.

Child's Name:
Date:
Address:
Age of Child: _____ years old
Birthdate:

- Approximately how many times has your child been to a zoo such as the Columbus Zoo or the Cincinnati Zoo?_____ times
- To the best of your knowledge and memory, please list the ages when your child went to the zoo:
    - The first time my child went to the zoo, he/she was _____ years old.
    - The last time my child went to the zoo, he/she was _____ years old.
    - Other times my child went to the zoo, he/she was _____ years old.
- Rate your child's interest in the zoo by circling one of these:
    - Extremely Interested
    - Very Interested
    - Somewhat Interested
    - A Little Interested
    - Not Interested

    - Hates the topic

- Rate your child's knowledge about the zoo by circling one of these:
    - Extremely Knowledgeable
    - Very Knowledgeable
    - Somewhat Knowledgeable
    - A Little Knowledgeable
    - Not Knowledgeable

- Does your child own any books about the zoo at home? Circle one: yes no
    - If so, how many books does he/she own? _____ books about the zoo

- Have you ever checked a book about the zoo out of the library? Circle one: yes no
    - Approximately how many times have you checked out a book about the zoo? _____ times
    - Approximately how many times have you read your child a book about the zoo? _____ times
    - Approximately how many times has your child been to a petting zoo? _____ times

The results of this survey will help Darlene Dreblow to study children's experiences with the zoo. An article about the results of the study will appear in the first issue of the newsletter for the 1993-94 year.

Thank you very much for completing this survey. Have a terrific summer!

*Note: The questionnaire has been formatted for the Web and differs from the one sent to parents.

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Appendix C

Parent Questionnaire about Their Child's Experience with Cameras and Taking Photographs*

Child's Name:
Date:
Age of Child:
Birthdate of Child:

I am trying to determine how much experience children of different ages have with cameras. I am sending this questionnaire to parents of children who are between 3 and 12 years old. This is important information for a research project that I am doing this summer. The information only will be used by me and will only be analyzed in group summary form. Please return this questionnaire to your child's teacher or to: Darlene

DeMarie-Dreblow, Muskingum College, New Concord, OH 43762-1199.

- Does your child own a camera that is his/her own? yes no
    - If yes, what type of camera is it?
    - If yes, at what age did your child receive his/her camera? ______ years old
    - Your child has now had this camera for ______ years

- Has your child ever used the family's or another camera to take pictures? yes no

- How old was your child when he/she took his/her first picture with a camera?
    - ______ years old when took first picture

- Approximately how many pictures has your child ever taken with a camera?
    - ______ total pictures taken by child with a camera in child's lifetime
    - Approximately how many rolls of film does your child take per year? 0 1 2 3 4 5 6 7 8 >8

- How would you rate your child's interest in taking pictures? (circle one)
    - extremely interested
    - very interested
    - fairly interested
    - doesn't know about
    - doesn't care about
    - dislikes

- How would you rate the quality of the pictures your child takes? (circle one)
    - outstanding
    - excellent
    - very good
    - good
    - fair
    - poor

- How many total cameras are there in your household? (circle one) 0 1 2 3 4 5 >5

- Approximately how many rolls of film did members of your household take last year? 0 1 2 3 4 5 6 7 8 9 10 >10

- How would you rate your family's interest in taking pictures? (circle one)
    - extremely interested
    - very interested
    - fairly interested
    - doesn't care about
    - dislikes
    - not as interested as used to be

- How would you rate the quality of the pictures your family takes? (circle one)
    - outstanding
    - excellent
    - very good

  - good
  - fair
  - poor
  - none taken

- Do you share all family pictures with your child? (circle one)
  - very often
  - often
  - sometimes
  - never
  - didn't have any to share

- Other comments about picture taking:

*Note: The questionnaire has been formatted for the Web and differs from the one sent to parents.

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Appendix D

Interview Questions about Children's Photographs

- Do you remember the day MCCCD went to the zoo? Tell me what you saw the day you went to the zoo.
  - What else did you see the day you went to the zoo?

- What animals did you see?
  - What other animals did you see?

- Remember you had a camera and you got to take pictures? Do you remember what pictures you took?
  - What other pictures did you take?

- What was the most important thing you learned the day you went to the zoo?
  - Why was that the most important thing you learned that day?

- What was the most important thing you learned about the zoo?
  - Why was that the most important thing you learned about the zoo?

- What was the most important thing you learned about zoo animals?
  - Why was that the most important thing you learned about zoo animals?

- How interested were you in taking pictures the day you went to the zoo?
  - Would you say you had a lot of interest, some interest, a little interest, not much interest, or not at all interested?

- Okay. We're going to go through the pictures you took at the zoo. I want you to tell me about each picture. So, we'll start with picture 1. Tell me about this picture.
    - Why did you take this picture?
    - (Continue with same questions for each photograph. Put each photograph on top of previous one.)

- Now I want you to look at all of your pictures. (Spread out photographs.)
    - I want you to tell me, are there any pictures that didn't come out the way you expected them to come out? Why?
    - Anything else? Why? (Etc.)

- Rate the overall quality of your pictures. In other words, how good do you think your pictures are?
    - Are they excellent, very good, good, fair, or poor?

- Which picture best shows what the zoo was like?
    - Why does that picture best show what the zoo was like?

- Do you wish you had taken a picture of anything else?
    - What do you wish you had taken a picture of?
    - Is there anything else you wish you had taken a picture of?

- You get to keep one of the pictures. I will make you a copy of the picture you choose.
    - Which picture would you like to keep?
    - Why did you choose that picture?

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Author Information

Darlene DeMarie is an associate professor of educational psychology at the University of South Florida in Tampa. She was the faculty administrator of Muskingum College's Center for Child Development until 1998 and the co-founder and co-director of the Early Childhood Summer Training Institute (ECSTI) until 1997. She previously taught grade 1, grade 2, and students with learning disabilities in grades 1 to 3 and 7 and 8. Her current research focuses on children's strategies for learning and the methods used to assess the meaning that children attribute to the environment in which they learn.

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Handwriting Readiness: Locatives and Visuomotor Skills in the Kindergarten Year

Deborah Marr, Utica College of Syracuse University; **Mary-Margaret Windsor,** Towson University; & **Sharon Cermak,** Boston University

Abstract

Handwriting is an integral part of every child's school experience. In order to provide the best program to children both with and without handwriting problems, elementary educators need to understand the factors underlying the skill of handwriting. This study investigated the relationship between the cognitive understanding of locatives (e.g., words used for spatial and temporal concepts such as "up" or "next to") and the graphomotor task of shape and letter copying in typically developing kindergarten children. Additionally, changes in those skills during the kindergarten year were examined. The Developmental Test of Visual-Motor Integration, the Boehm Test of Basic Concepts, and the Scale of Children's Readiness In PrinTing were administered to a sample of 138 children during the first and second half of their kindergarten year. The findings showed a significant increase in performance on all three measures from time one to time two. The relationships among the three tests varied. A moderate positive relationship between the visuomotor and handwriting test was found. This result supports previous findings that link visuomotor skills to handwriting. All other relationships were low. This study adds to a growing body of knowledge about the prerequisite skills needed for handwriting.

Introduction

Handwriting is an integral part of every child's school experience. Thirty to 60% of the elementary school child's class time is spent in fine motor/writing activities, with writing as the predominant task (McHale & Cermak, 1992). Some students have difficulty in the production of legible handwriting. Factors that contribute to illegible writing are incorrect letter formations or reversals, inconsistent size and height of letters, variable slant and poor alignment, and irregular spacing between words and letters (Alston & Taylor 1987; Tseng & Cermak, 1991; Ziviani & Elkins, 1984). Programs to address handwriting problems have been varied and include visual perception and visuomotor and letter formation training (Oliver, 1990; Lockhart & Law, 1994; Peterson, 1999). In order to provide the best program to children both with and without handwriting problems, it is necessary for elementary educators to understand the factors underlying the skill of handwriting.

Issues Related to Handwriting

Many studies have addressed the underlying factors related to handwriting. These factors can be categorized into external and internal factors. Examples of external factors are instructional procedures and materials used during writing (Alston, 1985; Carlson & Cunningham, 1990; Pasternicki, 1987; Rubin & Henderson, 1982; Zaner-Bloser, 1994; Ziviani, 1987). Internal factors are abilities found within the student: visuomotor skills, visual perception, motor planning (i.e., the ability to plan new motor behavior), in-hand manipulation, and kinesthetic awareness (Berninger & Rutberg, 1992; Case-Smith & Pehoski, 1992; Laszlo & Bairstow, 1984; Maeland, 1992; Schneck, 1991; Tseng, 1991; Tseng & Murray, 1994; Weil & Amundson, 1994; Ziviani, Hayes, & Chant, 1990; Ziviani, 1995). The internal factor of cognition and its relationship to handwriting has not been extensively studied. Several authors (Brown & Donnenwirth, 1990; Chu, 1997; Exner, 1990; Exner & Henderson, 1995; Moore & Law, 1990; Naka, 1998) have discussed the link between various aspects of cognition—particularly attention, memory, and language—and handwriting skill. It is suggested that success in handwriting can be optimized when the internal factors are at age-appropriate levels, making the student ready to benefit from classroom instruction.

Writing Readiness

Readiness is a term that describes foundation skills present before the child learns a new task (Slavin, Karweit, & Wasik, 1994). Sovik (1975) described writing readiness as having the needed characteristics to "profit satisfactorily from the instruction given in the teaching of handwriting at different stages through elementary school" (p. 54). Writing readiness skills have been further specified by several authors. Lamme (1979) outlined six prerequisites for handwriting: small muscle development, eye-hand coordination, utensil or tool manipulation, basic stroke formation, alphabet letter recognition, and orientation to written language. Benbow, Hanft, and Marsh (1992) listed four prerequisite areas: dominant hand use, midline crossing with the dominant hand, proper posture and pencil grip, and ability to copy the first nine shapes of the Developmental Test of Visual-Motor Integration (Beery & Buktenica, 1989). Other authors have identified kinesthetic readiness as an important precursor to handwriting instruction (Benbow, 1995; Laszlo & Bairstow, 1985; Levine, 1998). A foundation in kinesthesia allows reception of ongoing error information from handwriting efforts: this necessary information is stored in memory to be recalled when the movement is repeated. While younger children may substitute visual for kinesthetic feedback in the early elementary years, the switch to kinesthetic feedback should be made eventually to produce faster handwriting. If this switch is not made, the increasing demand for writing production in the later elementary years may result in academic productivity problems.

Cognitive readiness could affect handwriting performance. Several authors have suggested that a certain level of cognitive/language ability needs to exist before handwriting performance is optimal. Exner and Henderson (1995) stated that cognitive skills including attention, memory, perception, and language affect the learning of motor skills, but that the role of cognition diminishes once the skill is learned and skill refinement is in progress. Chu (1997) recommended evaluation of the cognitive components of attention, memory, language comprehension, and reasoning when a child has handwriting difficulties. Sandler et al. (1992) found that three of the four patterns of writing disorders identified in 9- to15-year-olds had links to either cognitive or visual-perceptual function. These included expressive language, rapid naming, picture naming, attention, and memory. While many authors recognize that cognition/language plays an important role in handwriting, the question of what constitutes critical cognitive readiness is not clearly answered.

The Kindergarten Year

Formal handwriting instruction may begin as early as the kindergarten year (Zaner-Bloser, 1994). The verbal directions used in handwriting instruction assume children understand spatial and temporal concepts. Terms such as "on top of the line," "above the line," or "between the lines" are used in handwriting curriculum (Benbow, 1995). An ability to understand these terms is acquired in a developmental sequence. Johnston (1988) summarized 19 studies on the acquisition of spatial location terms. The age at which the average child begins to understand the locative "in" is 2 years. Additional locatives are learned as the child increases in age, with the most challenging locative, "back/front," attained by the average child at 4 years 8 months. Examining children's understanding of spatial and temporal concepts would influence handwriting curriculum as well as intervention strategies used in the classroom.

While many studies examine handwriting of the older child (second grade and higher), fewer have researched the early years of beginning writing. Tan-Lin (1981), Tolchinsky-Landsman and Levin (1985), and Gombert and Fayol (1992) looked at handwriting samples of children in the 3- to 6-year-old range. These studies found a developmental sequence beginning in the younger ages with drawing and scribbling, and concluding in the older age groups with an ability to write legible letters. Tan-Lin (1981) found that at least one-third of 4- to 6-year-olds could print up to five simple words from memory. Common words written by this age group were MOM, DAD, DOG, CAT, and STOP.

Tan-Lin (1981) identified the quality changes in handwriting in 4- to 6-year-olds. She noted that such factors as size, quantity, proportion, and spacing improve with age. Additional studies of older children have examined size and proportion. Smits-Engelsman and Van Galen (1997) found that dysgraphic children (i.e., children with writing deficits) 7 to 11 years old showed more variability in letter size than nondysgraphic children. Windsor (1995), studying handwriting legibility, developed the concept of "letter form width." This composite measure determined from letter sizes allows comparison of relative size/form of letters between handwriting samples. She found that 8- to 11-year-old boys with attention deficit/hyperactivity disorder (ADHD) wrote larger letters than typical boys of the same age. Hamstra-Bletz and Blote (1993), in a longitudinal study of dysgraphic handwriting from grades two to six, found that inconsistent letter size was a common feature in dysgraphic writing.

Weil and Amundson (1994) examined the relationship between the kindergartner's ability to copy letter forms and geometric shapes. They analyzed performance on the

Developmental Test of Visual-Motor Integration (VMI) and the Scale of Children's Readiness In PrinTing (SCRIPT). A Pearson product-moment correlation coefficient revealed a moderate correlation ($r = .47, p < .001$). Students at the end of the first semester of kindergarten were, on average, able to copy 78% of the letters presented. Additionally, 88% were able to copy the first nine forms of the VMI. They concluded from the results "...that most children in kindergarten will be ready for beginning handwriting instruction during the latter half of the kindergarten school year" (Weil & Amundson, 1994, p. 987).

Although some aspects of handwriting in the kindergartner have been investigated, the relationship between the cognitive ability of understanding spatial and temporal concepts and handwriting has not been explored. Specifically, this study investigated the relationship between the cognitive understanding of spatial and temporal locatives and graphomotor production, including shape and letter copying, at two points in the kindergarten year. It was hypothesized that there is a positive, moderate correlation between the scores on the Boehm Test of Basic Concepts (Boehm, 1986), the Developmental Test of Visual-Motor Integration (Beery, 1997), and the Scale of Children's Readiness In PrinTing (Amundson & Weil, 1996) for both test sessions. Further, it was hypothesized that despite the fact that formal handwriting instruction does not occur in kindergarten, scores on all measures will increase from the first half of the year to the second half of the year.

Method

Participants

The participants for this study included 61 boys and 77 girls, with 120 right-handed students and 18 left-handed students. Ages at the first session ranged from 4 years 11 months to 6 years 7 months, with a mean age of 5 years 7 months (standard deviation 3.9 months). This convenience sample of typically developing children represents the majority of the kindergarten students in a middle-income, suburban community in upstate New York. A student was considered typically developing if there was no Individualized Education Plan (IEP) in place, he or she had not been retained in kindergarten, and he or she had English as the primary language. Six percent of the district's students are in families below the poverty level, with 10% using the free/reduced lunch program. Racial distribution of the participants was 93% white, 2% black, 1% Asian, and 4% other.

The teachers sent consent forms to all 180 registered kindergarten students. There were 177 consent forms returned. Eight students were on IEPs and were not included in the study. Additionally, 31 children were not included due to absence on one of the test dates or incomplete tests.

Instruments

The Developmental Test of Visual-Motor Integration (VMI) (Beery, 1997) is a widely used test of visuomotor skills. The student copies a series of shapes in a test booklet, and the graphic responses are scored using the criterion listed in the manual. Each shape is awarded either a 1 for passing or a 0 for failing. Scoring is discontinued after the student has earned three consecutive 0s. The maximum score possible is 18. This test was recently revised in 1997. Test-retest reliability is reported as .87, and inter-scorer reliability is reported as .94. Additional detailed information on the reliability and validity is cited in the test manual. Inter-coder agreement was examined for this study using a Pearson correlation. Resulting correlation between the first author and an experienced occupational therapist on a set of 10 student tests was .97.

The Boehm Test of Basic Concepts (BTBC) (Boehm, 1986) is a standardized, norm-referenced test designed to assess children's mastery of basic concepts. Each child has a booklet with pages containing several rows of three pictures. The examiner cues the child to a row and reads a question, and the child responds by marking the correct picture within the row. The test consists of 50 questions. Examples include "Mark the dog that is at the end of the line" and "Mark the animal that is at the bottom." Administration can be done in a group or individually. For a kindergarten sample, split-half reliability is reported to be .81, and test-retest reliability for tests given one week apart was .85. More detailed information on reliability and validity is given in the test manual (Boehm, 1986). For the present study, inter-coder agreement was established using a Pearson correlation. Correlation results between the first author and an occupational therapy research assistant on a set of 10 tests was found to be .97.

The Scale of Children's Readiness In PrinTing (SCRIPT) is a letter form copying research test developed by Weil (Weil & Amundson, 1994). The test booklet consists of five pages with a maximum of eight letters per page using the Zaner-Bloser manuscript alphabet. All 26 lowercase letters are included, as are the following eight uppercase letters: A, K, M, N, V, W, Y, Z. In total, the student copies 34 letters. The student sees the stimulus letter printed in the center of a square and is asked to copy the letter in the blank square space located directly below the stimulus letter. The test developer provided scoring criteria. Point-by-point reliability was reported at 90% to 100%. This level of reliability was not achieved during the initial scoring for the present study. Therefore, the decision was made to investigate reliability of scoring for this test. More refined parameters, which included criterion from the Test of Copied and Dictated Writing, were developed (see Figure 1) (Windsor, 1995). Similar to the original scoring of the SCRIPT, each letter was scored as pass/fail, but unlike the SCRIPT, each letter was judged by more specifically defined criteria, which allowed for more discriminate judging of each letter. Using the refined parameters and a Pearson correlation, an inter-coder agreement on a set of 10 tests was found to be .95 between the first and third author.

1. The letter is quickly and easily recognized as itself and no other symbol using the "peek hole" method; no gross errors in proportion are present. Case (upper or lower) is correct.

2. The letter has no missing parts and no extra parts. This includes the need to have the "stick" on a lower case "n."

3. No lines extend beyond the intersection by more than 2 mm.

4. Baselines and toplines must be parallel to the horizontal boundary lines of the blank stimulus box within 3 mm. Top lines and bottom boundary lines are not used for the letters "a," "b," "d," "q," "g," "r," "p," and the bottom of "u."

5. Upstrokes and downstrokes must be parallel to the vertical boundaries within 3 mm. The capital letter "M" and the dots on "i" and "j" are not included in this criterion. The side points of "z," "s," "x," "k," "e," and "c" must fall within a 3-mm space of each other, which is perpendicular to the horizontal boundaries.

6. Letter forms must be closed correctly with no more than a 2-mm gap. For "k," this means the intersection of the two angled lines can be no more than 2 mm apart.

7. Curved lines must be curved, and straight lines must be able to fit within a 2-mm space. These criteria include any extension lines that may be present.

8. Angles must be present.

9. There is no rotation of more than 45 degrees in any part of the letter; no reversals are present.

10. Each side of the horizontal line in "t" and "f" must be within 2-mm length of the other; the bottom portion of the vertical line of the "t" must be at least 2 mm longer then the top side.

11. Oblique lines cannot be perpendicular to the outer boundary lines (e.g., "v," "w," "y").

Figure 1. Criteria for scoring the Scale of Children's Readiness In PrinTing (SCRIPT).

Letter and word size may indicate maturity of a student's writing. Various authors have noted that large and variable-sized letters are markers of poor handwriting (Alston & Taylor, 1987; Hamstra-Bletz & Blote, 1993; Tseng & Cermak, 1991; Windsor, 1995; Ziviani & Elkins, 1984). An index of letter/word size called Word Form Width (WFW) was developed for this study. The students were asked to write five words from dictation on unlined paper. Words (MOM, DAD, DOG, CAT, and STOP) were chosen from a study by Tan-Lin (1981) that identified words frequently written by 4- to 6-year-olds. The words were spoken and spelled. The first word produced, MOM, was used to determine Word Form Width. See Figure 2 for measurement criteria. Inter-coder agreement between the first and second author on 10 samples was established at .94 using a Pearson correlation.

1. Measure the word only if it contains all letters, is in a relatively straight line, contains no reversals, is located in the large white space at the bottom of the page, and is generally recognizable.
2. Measure the distance in millimeters at baseline from the far left outer edge of the word to the right outer edge of the word.
3. Round the millimeter to the nearest whole centimeter.

Figure 2. Criteria for scoring Word Form Width.

Procedure

Prior to testing, the teachers were surveyed regarding their teaching experience and training in handwriting instruction. Nine of the ten teachers responded to the survey. The average number of years in teaching was 19.8, with a range of 7 to 30 years. The average number of years teaching kindergarten was 7.6, with a range of 0 to 20 years. None of the teachers reported having any training in handwriting instruction either as undergraduates or in workshops. While a specific handwriting curriculum is not used at the kindergarten level, the average time devoted per week to handwriting instruction in the classroom was 55 minutes, with a range of 40-90 minutes. Teaching techniques included demonstration and verbal cueing for letter formation.

There are 10 full-day kindergarten classes in this district. The participants were tested in their classrooms using group procedures. The first author administered all tests. Test sessions were scheduled in collaboration with the teachers. The sequence of tests was counterbalanced across the classrooms to control for fatigue and order effects. Testing occurred in November (Session 1) and April (Session 2). The tests were given in two separate time periods on the same day. The VMI and SCRIPT were administered in one 15-minute time period. The BTBC was administered in a 30-minute time period. The two time periods were separated by a range of 30 minutes to 3 hours based on the schedule of each class.

The VMI and the BTBC were administered according to standard group procedures from the manual. Before beginning the SCRIPT, students were asked to write the following dictated words on the open space provided on the cover sheet: MOM, DAD, DOG, CAT, STOP. Each word was spoken and spelled.

The directions for the SCRIPT were as follows:

> Please copy the letters you see in the box below each letter. When you are done with one page, go on to the next page until you have done all the

pages. When you are done, please put your pencil down in front of you on the desk.

Results

Directional paired *t*-tests were calculated, and as hypothesized, increased performance on the VMI, SCRIPT, and the BTBC was significant over the course of the kindergarten year (see Table 1). There was no significant change in the scores for Word Form Width.

Table 1

Total Scores for Sessions 1 and 2 on Graphomotor and Locative Measures

		Session 1		Session 2			
Test	*N*	M	SD	M	SD	*t*-Test	Effect Size
VMI	138	12.6	2	14	1.8	7.8*	0.7
SCRIPT	138	15.3	5.7	19.1	5.4	7.7*	0.7
BTBC	138	43.1	4.9	44.6	4.1	4.6*	0.4
WFW	114	6.4	2.9	6.2	2.8	0.6	0.1

Note: VMI = Developmental Test of Visual-Motor Integration; SCRIPT = Scale of Children's Readiness In PrinTing; BTBC = Boehm Test of Basic Concepts; WFW = Word Form Width.
*$p < .05$.

Pearson product-moment correlations were calculated between the VMI, SCRIPT, BTBC, and Word Form Width. For Session 1 (see Table 2), a moderate correlation was found between the SCRIPT and the VMI ($r = .39$), and the SCRIPT and the BTBC ($r = .30$). The remaining correlations were low ($r < .25$). As expected, a negative relationship existed between WFW and the SCRIPT ($r = -.21$) because as children get older, they write more legibly and smaller.

Table 2

Pearson Product-Moment Correlations between Measures for Session 1

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Measure	1	2	3	4
VMI				
SCRIPT	.39*			
BTBC	.25*	.30*		
WFW	.22*	-.21*	.19*	

Note: VMI = Developmental Test of Visual-Motor Integration; SCRIPT = Scale of Children's Readiness In PrinTing; BTBC = Boehm Test of Basic Concepts; WFW = Word Form Width.
*$p < .05$. $N = 138$.

For Session 2 (see Table 3), the relationship between the SCRIPT and the VMI continued to be moderate ($r = .36$). All other correlations were low. The negative relationship between WFW and the SCRIPT was again demonstrated. As in Session 1, the hypothesis of a moderate relationship between the VMI and the SCRIPT was supported. However, a moderate relationship between the SCRIPT and the BTBC was not.

Table 3

Pearson Product-Moment Correlations between Measures for Session 2

Measure	1	2	3	4
VMI				
SCRIPT	.36*			
BTBC	.29*	.19*		
WFW	-.04*	-.22*	-.10*	

Note: VMI = Developmental Test of Visual-Motor Integration; SCRIPT = Scale of Children's Readiness In PrinTing; BTBC = Boehm Test of Basic Concepts; WFW = Word Form Width.
*$p < .05$. $N = 138$.

Discussion

The purposes of this present study were to examine changes in cognitive, visuomotor, and graphomotor skills over time, and to investigate the relationship between the cognitive understanding of spatial and temporal concepts, visuomotor skills, and graphomotor production in the kindergarten child. Considering the first purpose, three of the four measures demonstrated statistically significant improvements over the course of the kindergarten year. Changes in WFW were not significant. Change would be expected due to maturity and classroom training as skill is improving for this age group. The lack of significant change in WFW scores may reflect the measure used. Children were given a large space on which to write their words. The use of lined paper may have prevented them from using more of the page than they might otherwise have done. Additionally, WFW may not be an appropriate measure of a student's writing maturity for this age group because writing skill may still be variable.

Benbow, Hanft, and Marsh (1992) have suggested that children are ready for handwriting instruction once they can copy the first nine forms of the VMI. Only two subjects received a score of less than 9 on the VMI at Session 1. The SCRIPT scores for these two children were between 1 and 2 standard deviations below the mean. No child received a VMI score of less than 10 at Session 2. The two subjects with low VMI scores at Session 1 had SCRIPT scores of 1 standard deviation below the mean in Session 2. According to Benbow's criteria, all children in this sample were ready for handwriting instruction at Session 2. Weil and Amundson (1994) also concluded that most children would be ready for handwriting instruction in the latter half of their kindergarten year.

Results related to the second purpose indicated that a moderate relationship exists between visuomotor and graphomotor skills. Tseng and Murray (1994), studying children in grades three to five, found correlations consistent with the present study. In their study, a sample of poor handwriters had a correlation of *r* = .31 between handwriting and the VMI, while a sample of good handwriters had a correlation of *r* = .33. Four teachers rating legibility of a copied textbook paragraph measured handwriting. The relationship between graphomotor production and visuomotor skill was not as strong as that seen in some other studies. Weil and Amundson (1994), examining typical children using the same measures and the same age group, found the correlation to be moderate (*r* = .47). Their scoring criteria for the SCRIPT was more lenient than that used in the present study and resulted in a mean score of 26.2 out of 34 in the second half of the kindergarten year, compared with the 19.1 out of 34 in Session 2 of the present study. Maeland (1992) examined the relationship of the VMI with handwriting of 10-year-old students and found a correlation similar to Weil and Amundson (1994) (*r* = .43). Independent judges rating legibility of six dictated sentences on a 7-point scale measured handwriting. The different methods used to measure handwriting may contribute to the range of correlations seen.

The relationship between cognitive skills and handwriting has not been extensively studied. However, several authors have stated the importance of cognition in any skilled motor task (Brown & Donnenwirth, 1990; Chu, 1997; Exner, 1990; Exner & Henderson, 1995; Henderson & Pehoski, 1995; Meulenbroek & Van Galen, 1990; Sandler et al., 1992). Understanding spatial and temporal concepts had a low relationship to visuomotor or graphomotor skills in the present study. Because this sample primarily included typically developing, middle and upper socioeconomic children, spatial and temporal concepts needed for writing may already be understood. The BTBC manual indicates that 98% of kindergarten children understand the word "top," 90% understand the word "between," and 85% understand the word "above" (Boehm, 1986). Because these words are used during handwriting instruction, the variations in graphomotor production may be due to factors not related to these measured concepts. This finding may not be the case for children from different socioeconomic backgrounds or cultures.

Implications for Practice

Educators are concerned about a young student's readiness for handwriting instruction. The results of this study add to the growing conclusion that typical students in the latter half of kindergarten have the foundation skills needed to begin formal handwriting instruction. Kindergarten teachers should consider available curricula that offer beginning handwriting training and are motivational for this age group.

Early identification of children with the potential for handwriting problems is another concern for the kindergarten teacher. The results of the present study point out an area that may assist in early identification: the relationship between visuomotor skills and handwriting. Evaluating visuomotor skills may help pinpoint children who need close monitoring or specific interventions to prevent the development of handwriting problems. Future research needs to investigate whether training in visuomotor skills will increase handwriting performance.

Limitations

The first limitation of the present study relates to the use of group administration of the measures. Although group administration of the measures is described in the manuals, the teachers felt that many of the students rushed to keep pace with their classmates. It was also noted that some children looked to their peers for correct answers or models of writing despite the efforts of the examiner to discourage such behavior. Classroom teachers reported feeling their students were capable of higher performance if the tests had been given individually.

The subjects used for this study were homogeneous, generally from a higher socioeconomic level, and had no identified disabilities. These characteristics may have resulted in less variability in scores and less representation of kindergarten children as a whole and may limit generalizability of the results to children with low socioeconomic status or atypical abilities.

Implications for Future Research

The present study examined typically developing children and has supported the importance of visuomotor skills in handwriting for the kindergarten child. Examining this relationship within populations at risk for handwriting problems would be valuable. If the relationship is stronger with these children, handwriting teaching strategies using locative concepts may need to be adapted.

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Teachers' Beliefs and Teaching Beliefs

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Abstract

On the premise that teacher education programs, with their emphasis on methods, are largely ineffective in improving current teaching practice, this paper examines ways teacher educators can change some of the beliefs of teachers and teacher candidates early in a program so as to optimize the impact of learning new teaching practices. Three central questions are addressed—what technologies are available to teacher educators for changing candidate beliefs, what ethics come into play concerning changing the beliefs of candidates, and what beliefs should we teach—and the problems posed for changing beliefs. The paper then explores the concept of "dispositions," suggesting that if teacher educators could conceptualize the problem as one of "weak dispositions" rather than one of "beliefs," many of the issues would disappear. Three possible dispositions are explored as goals for a teacher education program: knowledge, colleagueship, and advocacy.

Introduction

This essay is based on the premise that teacher education programs are largely ineffective in improving the current practice of teaching. Some programs choose not to improve practice, but instead they strive to prepare teachers who fit into the patterns of current practice. These programs hire practicing teachers to offer methods courses and discourage teacher candidates from studying foundations courses that can serve as a springboard for questioning current ways of teaching. But many of us in the field of teacher education aspire to improve current practice, confident that no matter how effective current practice might be in some schools or in some classrooms, it offers room for improvement. If this premise is correct, it begs the question "Why aren't we more successful?"

Many years ago, Zeichner and Tabachnick (1981) advanced one explanation—namely that the thousands of hours that prospective teachers spend as pupils in the classroom shape their beliefs. These conservative beliefs remain latent during formal training in pedagogy at the university and become a major force once the candidate is in his or her own classroom.

Subsequently, Kennedy (1997) attributed this state of affairs in part to the beliefs that candidates and teachers bring to teacher education. It is not clear what the source of those beliefs might be—a product of their upbringing, a reflection of their life experiences, or a result of socialization processes in schools. Nevertheless, teachers and teacher candidates have strong beliefs about the role that education can play, about explanations for individual variation in academic performance, about right and wrong in a classroom, and many other areas. Kennedy asserts that these beliefs are used to evaluate the new ideas about teaching that teachers and teacher candidates confront in their methods classes. Those teachings that square with their beliefs are recognized and characterized as "what's new?" Teachings that challenge their beliefs are dismissed as theoretical, unworkable, or even simply wrong.

Kennedy went on to say that one belief that teacher candidates bring to their professional schooling is "that they already have what it takes to be a good teacher, and that therefore they have little to learn from the formal study of teaching" (p. 14).

Bruner (1996) made a similar and related point. He argued that most people have acquired what he calls a "folk pedagogy" that reflects certain "wired-in human tendencies and some deeply ingrained beliefs" (p. 46). This view leads to what Bruner called a new and even revolutionary insight: "[Teacher educators], in theorizing about the practice of education in the classroom, had better take into account the folk theories that those engaged in teaching and learning already have" (p. 46).

If Zeichner, Tabachnick, Kennedy, and Bruner are right, perhaps teacher educators need to take on the task of changing some of the beliefs of teachers and teacher candidates early in a program so as to optimize the impact the program may have on learning new teaching practices. There may be an even more urgent reason for addressing the problem of changing beliefs. Research on attribution theories demonstrates that the attributions that teachers make to their pupils who are doing poorly may reflect their beliefs but also hinder their effective interventions with pupils. So, academic failure often is attributed to external factors in the child's life—the home, the family, the peer group—rather than reflecting on problematic teaching. Pupils in our schools who are the targets of attributions that narrow the ways in which their learning problems are addressed are victims, one might say, of teacher belief systems. Here is a second reason why changing the beliefs of teachers and teacher candidates should be high on the agenda of teacher educators.

Three Central Questions

What Technologies Are Available to Teacher Educators for Changing Candidate Beliefs?

Before addressing this question, it is appropriate to get an understanding about the size of the challenge. It has been long understood that some beliefs are more important than others to individuals, and the more important the belief is, the more difficult it is to change (Rokeach, 1968, p. 3). It is also understood that if a central belief is changed, other beliefs within the person's belief system are affected. It has been argued that beliefs that are linked closely to their ego—sense of self—are more important than any others (Rokeach, 1968, p. 4). One can only wonder how many supervisors have convincingly said to their student teachers, "I'm not criticizing you, I'm criticizing your teaching." It seems very likely that beliefs about teaching are very central beliefs and as such resist change.

Another line of research that supports this view is that of Markman (1989) in the area of language development. She argues that "very young children are capable of forming object categories that are so stable, available, habitual, and familiar that they achieve special status. These basic categories resist change. It is possible that some of the basic "concepts" that all children acquire having to do with justice, learning, and even teaching are learned early and as "basic concepts," in Markman's terms, are difficult to change. In my work with first- and second-year teachers at the University of Delaware, I have collected a number of "autobiographies" in which these teachers tell of their first awareness of teaching as a possible career. It is interesting to note how many speak of "loving to teach" at age 6. Here is a story that reflects many others: "When I returned home from first grade, I would go to my bedroom and line up all my dolls as pupils. Then, I would teach them a lesson. I loved being a teacher, and it was especially enjoyable because my dolls were so well behaved."

This teacher and many of her colleagues reported "learning how to teach" in this manner. It is possible that the beliefs about teaching, learned at an early age, were both linked to a sense of self and were "basic" in Markman's sense—making them extremely difficult to change. Tatto's (1996) important work on beliefs concluded "lay cultural norms [beliefs] among enrollees [in teacher education] are strongly ingrained and that most teacher education, as it is currently structured, is a weak intervention to alter particular views regarding the teaching and management of diverse learners" (p. 155). With this caveat, it is time to review the technologies available to us.

Belief as Criterion for Admission. In a sense, avoiding the challenge, we could change the profiles of our candidates' beliefs by having at least one of the criteria used to admit candidates into teacher education be that of holding the beliefs the faculty has identified as important. Would medical schools accept candidates who did not believe in the germ theory or the scientific method? Would dental schools accept candidates who did not believe in novocaine?

Confronting the Candidate with Dissonance. Dissonance theory suggests that if we engage teacher candidates in activities that arouse dissonance—beliefs might change (Festinger, 1957). One of the sources of dissonance identified by Festinger is "past experience" colliding with new cognitions. It is this source that is perhaps most relevant to teacher education. Of course, there are other standard responses to dissonance—one of which is to discredit its source. Some of the harsh things that are said or felt about teacher educators might well be understood as responses to dissonance. If dissonance is going to be effective, teacher educators will need to address their own and their program's attributes that make it easy to dismiss what is being taught. Perhaps, for instance, professors should all be successful, experienced classroom teachers so candidates cannot ask derisively, "when was the last time you were in a classroom?"

Apprenticeship Experiences. In apprenticeships, "novices and experts are from different worlds and a novice gets to be an expert through the mechanism of acculturation into the world of the expert" (Farnham-Diggory, 1994, p. 466). We have used apprenticeships in teacher education since the beginning, perhaps expecting that in the acculturation process, our candidates will "catch" the correct beliefs (Farnham-Diggory, 1994). Of course, this hope will be realized only if we place our candidates in settings that activate the targeted beliefs. There is some hope that the culture of the Professional Development Schools, as envisioned by the Holmes Group (1995), will work as a positive force in the acculturation of our teachers. The data are not yet in on this question.

Promoting Professional Development. One could argue that primitive and naive beliefs, "folk pedagogy" in Bruner's terms, reflect developmental stages. Belenky, Clinchy, Goldberger, and Tarule (1986) describe various "ways of knowing" that they consider "developmental." Teacher educators could work with their candidates to promote advancement to higher-level stages. Unfortunately, in their case studies describing how people moved from one stage to another, no systemic interventions seemed to operate. Instead, each person studied had a story about what prompted a change in the way they "knew," but nothing that seemed to give insight to teacher educators.

Values Clarification. L. E. Raths advocated a theory of values that suggested people hold beliefs when they are not fully examined. Only after they are examined and re-accepted after considering alternatives, anticipating consequences, and trying out their implication in life itself can a belief become a value. His procedures for moving beliefs to the category of "values" was called "values clarification" (Raths, Harmin, & Simon, 1966). In the few experiments carried out at the college level, advocates of values clarification found that the process was slow and not always successful.

Case Study. In her doctoral thesis written at the University of Illinois at Urbana-Champaign, McAninch (1993) posited an interesting hypothesis. She advanced the notion that if teacher education candidates were to study cases of instruction through different lenses—the lens of their own beliefs, of constructivism, of direct instruction, and of the project method, changes in belief systems might develop. McAninch derived her hypotheses mainly from the work of Joseph Schwab (1978) who described the process of examining phenomena with different lenses as "polyfocal conspectus." McAninch also built on the work of Belenky et al. cited above. While her ideas seem promising, McAninch's hypotheses have not been formally tested.

None of these approaches is easy or quick. If they did work, and if they were feasible, and if they were ethical, the interventions would probably take considerable time, with the exception of the first one.

What Ethics Come into Play Concerning Changing the Beliefs of Our Candidates?

What are the ethics involved in making a concerted effort to change the beliefs of another person? During the Korean War, such efforts on the part of the Russians and North Koreans to alter the political beliefs of American soldiers who were being held as prisoners of war were well known. While there was always a threat of physical punishment and other deprivations, the brainwashing techniques were often a combination of some of those suggested above—dissonance, social pressures, and immersion in a new culture. POWs were inundated with "facts" about injustices in the United States, how rich people were benefiting from the war, and how the capitalist system had many contradictions and problems. While such efforts were generally seen as obscene and decidedly "un-American," American universities on occasion ask professors and administrators who are accused of sexism or racism to attend "sensitivity" classes to improve their attitudes and presumably their practices. Even now, 50 years later, any effort to alter the beliefs of audiences or individuals is frequently characterized as "another form of brainwashing." There is something inherently wrong with working to change the beliefs of others, especially from a position of power.

On the other hand, we have felt open to teaching people skills. The wonderful thing about skills is that people who learn them may, because of their belief systems or other reasons, elect not to use them. While brainwashing implies fashioning some permanent and decisive thinking patterns in the minds of teacher candidates, skills are far more external—to be used or not at the whim of the learner. This relaxed attitude about "skills" is reflected as well in our willingness to disclose our skills or to ask others to disclose their skills. Some people would surely object if a teacher took a poll of his class concerning their beliefs about abortion, about race in America, or the nonavailability of health insurance for so many poor people. But to quiz them on their skill in taking a square root, or in asking higher-level questions, or computing the reliability of a teacher test is another matter. This distinction between teaching values and teaching skills prompted Bereiter (1973) to write a book titled *Must We Educate?* The thesis of the book is that public schools should not educate, that is deal with beliefs, but should only train—work with skills.

Why are we willing to uncover our skills but reluctant to share our beliefs? Perhaps it has something to do with the idea that skills represent only a capacity to act, while beliefs reflect dispositions to act. And it is one's dispositions that are at the heart of our personhood. In sum, there are difficult ethical questions to answer if we are going to systematically go about changing the beliefs of teacher candidates.

What Beliefs Should We Teach?

If we decided that we knew how to change beliefs and if we decided that it was ethically appropriate to change the beliefs of teacher candidates when and if certain conditions were met, the next question becomes "which beliefs" do we want to teach? For example, we could ask candidates to respond to the following beliefs (or others, mine are just examples) on a Likert scale, from strongly agree to strongly disagree. How would we want our candidates to respond at the end of the program? Notice how some "ideals," notably items 4 and 5, appear to be contradictory:

1. All children can learn.
2. Pupils should be treated as clients.
3. Children have to be prepared to "read up to grade level."
4. Children should be treated equally, as a matter of justice.
5. Children should be treated differently, each in terms of his own needs and interests.
6. Learning should be fun.
7. Diversity in a classroom is a strength and not a problem.
8. The teacher is accountable for what is learned or not learned in a classroom.
9. Children should be given praise and recognition in terms of what they have earned and deserve.

Another approach to characterizing the beliefs of our candidates is asking them to respond to the following items taken from Tatto's (1996) interesting work:

1. When pupils are successful in achieving intended goals or objectives, that success is often attributed to one of the following sources (see below). Which do you believe is the most powerful determinant of success? Circle the letter of your

choice.

a. Pupil home background
b. Pupil intellectual ability
c. Pupil enthusiasm or perseverance
d. Teacher attention to pupil interests and abilities
e. Teacher use of effective teaching methods
f. Teacher enthusiasm and perseverance

2. When pupils fail to achieve intended school goals or objectives, the failure is often attributed to one of the following sources (see below). Which do you believe is the most powerful determinant of school failure? Circle the letter of your choice.

a. Pupil home background
b. Pupil intellectual ability
c. Pupil enthusiasm or perseverance
d. Teacher attention to pupil interests and abilities
e. Teacher use of effective teaching methods
f. Teacher enthusiasm and perseverance

It is likely that reliable measures could be obtained if these items were offered in a paired-comparison format—asking candidates to choose "which one of each pair" is the more powerful.

I am trying to suggest that arriving at a set of beliefs in which a faculty group believes and that are considered so important that it is decided that all candidates should acquire them is almost impossible to imagine. So even if we had the technology available to us for changing beliefs, and even if we agreed that it was ethical to change the beliefs of our candidates, deciding on which particular beliefs to advance in our program would be difficult. In sum, in spite of the insights of Zeichner through Bruner cited above, changing candidates' beliefs looks like a hopeless task.

Shifting the Focus

The previous paragraphs suggest in the main a dead end here. If our candidates have beliefs that interfere with their learning new ideas about teaching and learning, and if those beliefs can actually do harm to their pupils, certainly we are obliged to change them. But a review of the technologies available to us is not promising. We are not sure which are "better" beliefs, and if we knew, we do not have a way of changing them.

Lilian Katz offers us an insight that may lead us out of this conundrum. She introduced to the field the notion of "dispositions" (Katz & Raths, 1985). In her framework, beliefs can be considered "pre-dispositions." She used the term dispositions as a summary of actions observed (p. 302). Perhaps we would benefit from changing our focus away from beliefs *per se* to "dispositions." It may be more tolerable to say to our candidates and to ourselves, "we mean to strengthen certain dispositions in our candidates' repertoire"—dispositions that almost surely already exist in our candidates. We would not be in the business of change—but of "strengthening." The dispositions might include:

1. Making setting attributions and not trait attributions.
2. Making efforts to meet children's needs.
3. Working to clarify children's ideas instead of judging them.
4. Rewarding approximations.

It is surely the case that these few examples are grounded in beliefs that are not made explicit. However, if we adopted the notion of "dispositions" as the frame for our goals, we could ask that our candidates behave in ways consonant with these dispositions or others we might select, regardless of what they "believed" about them.

There is a problem with my listing—the entries constitute a collection and not a set. It would be so much better, from a conceptual standpoint, if we had thoughtful categories to prompt our identification of dispositions. Here is an attempt to make the selection of the dispositions we plan to strengthen into some sort of rationale.

A teacher is a professional. There are at least three elements that separate professional persons from those working in careers that are not professions. The first has to do with knowledge. Professionals not only act with knowledge, they value the knowledge they possess. One set of dispositions to strengthen in our candidates is to value knowledge. The second has to do with colleagueship. Professionals reach out to consult with one another, to unite in associations to advance professional goals, and to collaborate in the best interests of their clients. We could choose to strengthen dispositions on the part of our candidates to work with others to achieve common goals. A third general area associated with professions is that of advocating for clients in their care. For teachers, this advocacy means not only watching out for pupils assigned to their classes, but also for the poor, the disadvantaged, and the downtrodden in our communities. Ideally, professions are not guided by a profit motive. Instead, they are concerned with issues of justice, fairness, and the well-being of their clients and for others who may become clients. In this respect, professionals in all fields give their time and dedicate their concerns on behalf of their principal clients and for those in our society who are less fortunate. This third area, advocacy, could become another source of dispositions that we take on as goals.

Let me illustrate how this might work: Taking these categories as a starting point, consider the following dispositions we might take on as goals for a teacher education program:

Knowledge

1. Given a problem or issue, our candidates wonder about what the literature has to offer. They are disposed to look up references and read what research summaries have to say about the problem or issue. They demonstrate learning new ideas from books, pamphlets, professional journals, and from each other.
2. In discussing a problem or issue, our candidates use vocabulary in the field, not to distance themselves from pupils or parents, but to convey with precision the meanings they attach to phenomena.
3. Given a problem or issue, our candidates ask for the data that support potential solutions and ask what alternatives are available to consider.

Colleagueship

4. Our candidates associate with other colleagues in professional study groups, professional associations, and in unions for the purpose of solving problems, improving personal skills and understandings, and contributing to the betterment of society through joint actions.
5. Given a problem or issue, our candidates are disposed to seek help from colleagues, supervisors, administrators, and from other professionals in the community.
6. Given a problem or issue, our candidates raise questions about ethical principles and concerns.

Advocacy

7. Given a problem or an issue, our candidates are sensitive to notions of justice, fairness, and equity as they affect their own pupils and all pupils within the community.
8. When analyzing the behaviors of pupils or parents, our candidates initially look to "setting" factors rather than "trait" factors to account for the behavior.
9. In any and all experiences involving pupils or their parents, whether incidental or planned, teachers seek ways to transform them into educational opportunities.
10. Our candidates relate what is being taught to the lives and experiences of their pupils, teaching in ways that are sensitive to the contexts in which pupils live and with which they are familiar.
11. In relating to their own pupils, our candidates demonstrate that pupil views are important.

Of course, this set of dispositions is an example. A faculty that adopted these dispositions or a similar set as goals would also need to teach other skills and understandings, some of which are prerequisites for these dispositions. One cannot have a disposition without an associated skill.

The advantage to aspiring to change the dispositions of our candidates seems to be the following. First, because dispositions are closely related to skills and practices, the focus seems to move away from the dicey topic of beliefs. Second, because dispositions can be written at a convenient level of abstraction, not "micro" and not "macro," teacher educators might more likely agree on a set as a focus for a particular program. Finally, dispositions can be strengthened by modeling and through apprenticeship experiences. Focusing on dispositions might be a way out of the dead end my analysis of the literature on changing beliefs suggests.

Summary

This paper cited authorities such as Kennedy (1997) and Bruner (1996) as asserting that the prior beliefs of teacher candidates can hinder learning about teaching. The implication that seems reasonable is that teacher educators must uncover and change particular beliefs that hinder the efficacy of teacher education. Next, problems associated with changing beliefs—technical problems, theoretical problems, and ethical problems—were cited. Finally, it was suggested that instead of conceptualizing the problem as one of "beliefs," if teacher educators would see the problem as one of dispositions, many of the issues would disappear. The reader must decide if that is the case.

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"Clouds Come from New Hampshire": Confronting the Challenge of Philosophical Change in Early Childhood Programs

Ellen P. Dodge, Barbara N. Dulik, & Jon A. Kulhanek
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Abstract

This paper describes the evolution of an early childhood education program from one that was teacher directed, traditionally structured, and academically oriented to one that was emergent and child centered. The paper discusses how philosophical consensus was established, needed changes were prioritized and implemented, and new ways of thinking were presented to the traditionally trained faculty and to some change-resistant parents.

Introduction

> *The way you activate the seeds of change is by making choices about the results you want to create. When you make a choice, you mobilize vast human energies and resources which otherwise go untapped.... If you limit your choices only to what seems possible or reasonable, you disconnect yourself from what you truly want, and all that is left is a compromise.* (Robert Fritz) *

Few things in life have such a power to immobilize, energize, divide, or unite, as does the process of change. The ease and comfort that can come from doing something because "that's how it has always been done" is undeniable. However, for a growing number of early childhood educators, this perceived comfort is being replaced with a sense of boredom, obsolescence, and feebleness. No longer are the traditional teaching practices involving academics, units, and themes seen as the best ways to reach and empower the children with whom we work. Instead, an approach that values the emergent ideas, cultures, and creativity of young children is being embraced by a growing number of teachers as the best practice in the early childhood classroom.

While much has been published or proclaimed regarding these new and innovative approaches to early education, traditional nursery school practices do remain alive and well, in part because many of our colleges and universities continue to reinforce these traditional methods in their teacher education programs. Also, the expectations of parents place an additional burden on the early childhood teacher to provide a program that will shape a child capable of reciting facts and constructing "refrigerator art" but often unable to negotiate the day-to-day challenges of solving problems and independent, critical, and creative thinking.

The fact remains that methods do evolve. Certainly, our medical practices have advanced beyond the earliest procedures. Just as certain 16th-century surgical routines have given way to superior 21st-century techniques, so too should our work with young children evolve as we gain greater understanding of the ways in which children learn.

Our school began such a process of change three years ago, although truth be told the process had really been in motion for years before that. As the quote by Robert Fritz intimates, our journey has not been without its support and opposition, and it has, at times, taken tremendous stretches in our own thinking as well as a little compromising. Through it all, the willingness to pick ourselves up, remain flexible, and hold a goal in mind has kept the process in motion. Here is our story.

A Process of Change Unfolds: The Program

> *The great thing in this world is not so much where we are, but in what direction we are moving.*
> (Oliver Wendell Holmes)

It was a rainy day in September. The previous night a very loud and brilliant thunderstorm had blown into northern California. It was possibly the fiercest storm to hit the area in the lifetime of our young children. As we met together on the morning following the storm, the excitement level was high, and individual experiences were related with unbridled enthusiasm! The children shared with each other and the teachers their understanding of what had happened the previous night. Many presumptions were tossed about, some embraced and some discarded. An outside observer would have heard that:

- The lightning is in a bolt, and then the thunder is booming after.
- Clouds make rain, and wind makes the clouds move.
- Sometimes lightning comes and sometimes not. And the rain always keeps the flowers growing.
- Clouds are made from fluff, and fluff is made from feathers.
- God lives in the clouds, and the moon lives in the clouds, too!
- Sometimes, if you throw water up to the sun, it goes into the clouds and then it rains.
- My mommy told me that if the noise doesn't come for a while that means it is far, far away.
- I think the lightning comes from the moon and makes it really loud and bright.
- *I know that the clouds come from New Hampshire.*

For the next few weeks, a revolving group of children in the classroom was engaged in various, self-directed explorations of storms and clouds. Later, as we met to discuss the work of the children, we took time to revisit questions we had asked ourselves many times: How did we get to the place at which we could stop and *really* listen to the children? Why did we value this capability as an essential part of our program? Yet the most important question we revisited that day was: Where did we come from, and where are we going next?

A Traditional, Teacher-Directed Environment

> *The American ideal, after all, is that everyone should be as much alike as possible.* (James Baldwin)

The Early Childhood Program at Phillips Brooks School had its start in 1975. It evolved from a traditional program that was teacher planned and implemented into one in which the children construct their own learning. In 1975, it seemed that early childhood programs either chose a philosophy that was based on the work of Maria Montessori or a philosophy that was academically oriented, stressing rote learning. Although not Montessori trained, we found the lure of the carefully crafted wooden materials and the dedication of Montessori's many advocates difficult to resist. What emerged was a program that combined the materials and the dedication of a Montessori program with the comfort and the security of a traditional academic program. Our carefully crafted program was successful in an environment that was created by the melding of a traditional and parochial school, which was founded and housed in a parish complex. There was no reason to question the veracity of the program for the next several years. The preschool provided a stepping-stone into the elementary grades. It also filled a community need for a thoughtful and well-organized early childhood program. It was successful financially, met the needs of the families in the parish, and was never reevaluated.

Over the ensuing years, the results of studies on how children learn were published and widely accepted. However, in a school that had been founded upon and historically functioned in a traditional, teacher-led philosophical environment, there was no serious thought given to changing the approach to educating children. Change is work. Change means admitting that what one has always done may be improved upon. Change is frightening. Change was not an option.

A Time of Transition

> *Lots of folks confuse bad management with destiny.* (Kin Hubbard)

By the late 1980s, there had been an amazing number of studies published and widely circulated about the way a human brain develops, the way children learn and understand and interpret information, and how lifelong learners are nurtured in the early years of development. The director of the program and some members of the staff considered many methods of working with children during these years. However, there was no consistency within the teaching staff, many of whom were part time, and the idea of reinventing the ways of working with children was not viable. Some new ideas were tried, such as mixed-age grouping and individualized planning that considered each child's developmental level, but parent and administration pressure to stay with the tried, the true, and the secure was immense.

In the early 1990s, the school was approaching a time of transition, but the resistance to change was stronger than the desire of some and the ability of others to initiate change. By this time, themes had become the guiding principle of our early childhood program. These themes were teacher conceived, planned, and executed. The parents loved the lavish displays created in the classroom. Each year, the space was turned into an Amazon Rain Forest with papier-mâché animals hanging from 12-foot-high cardboard trees. One year, the third grade and the preschool combined efforts and put on a play written by the children and presented to the families and the rest of the school. This effort was met with a directive that the upper grades were not to spend time with the preschool. The reason given was that while we could afford to be "whimsical," the children in kindergarten through sixth grade needed to be concerned with academics. At this point, the kindergarten was removed from the Primary Department and made a part of our lower school (kindergarten through third grade). The preschool was considered a stepping-stone into the elementary school but an unimportant educational experience. The frustration level on the part of the director and staff was intense.

The Early Learning Center

In 1997, the founding school head retired, and a new leader was hired following a nationwide search. This new head had been instrumental in implementing an innovative pre-kindergarten program at her former school. She brought with her a great appreciation for our program and our goals. She was eager to help establish a place for us as contributing members of the school and understood the value of the changes we had been attempting to initiate. She brought with her an early childhood teacher from her former school. He proved to be a multi-talented teacher with boundless energy, a passion for children, and an amazing amount of creative ability. He and the director were given the opportunity to attend the Winter Study Session in Reggio Emilia, and their experience changed forever the course of the Early Learning Center at Phillips Brooks School.

A new living and working environment was created, with forethought and careful planning. Each area offered unique learning opportunities and exploration possibilities. Situations were set up that needed solutions, and the staff was trained to recognize opportunities for learning when they occurred, by plan or by chance, and to enable the experiences necessary to facilitate the understanding process.

The Early Learning Center was given the freedom to hire staff who were philosophically in tune with the emerging program. The first result of this change was the hiring of an experienced teacher found through the Reggio Emilia listserv who was relocating from the Midwest and was looking for a program very much like the one that had been created at Phillips Brooks School. The returning staff attended the summer Reggio Institute in Denver, during the next two summers. Everyone became enthused about and dedicated to the program, which was renamed the Early Learning Center at Phillips Brooks School.

The Early Learning Center had become a child-centered early childhood program with an emergent curriculum. The influence of Reggio Emilia was evident, but the program was unique to the history that preceded it, the school of which it was a very active and important part, the people involved in creating it, and the families it served. The transition was not an easy one. Many roadblocks were put in the way, but with persistence and determination and an unshakable faith in the emerging program, we found ways to go over, under, or around them all, without compromising our strongly held beliefs.

Advocating and Negotiating: Faculty/Administration/Board of Trustees

All big changes in human history have been arrived at slowly and through many compromises.
(Eleanor Roosevelt)

A few of the members of our faculty that remained after the assumption of leadership by the new director were unprepared for, and resistant to, any additional change. Suddenly, expectations were increased, responsibilities were shared by all, and change became a way of life. Fear was the dominant emotion felt during this time: "Will I measure up?"; "Will I have to do a lot more work?"; "Will the ways I have always taught be valued?"; "What will be expected of me?"

The Board of Trustees had worked with only one Head of School. The board was committed to reassuring all members of the school community that the strengths that had made the school a successful and sought-after institution of learning in the elementary years would not be "tossed out" in the process of change and growth. Leadership styles vary as much as learning styles, and all were questioning what was to come. Would we be asked to forsake our Episcopalian roots? Would Christianity no longer be the religion of choice, although others were welcomed and recognized? Would the history and tradition of the school be ignored? Each step of the evolutionary process was examined and reexamined with ponderous attention to detail. Each step was met with resistance by some and with jubilation by others. The excitement about the future grew as the process evolved.

One symbol of *change* was the Early Learning Center. Even the name was different. Does nothing remain constant? The environment was white and pristine, well planned with a purpose behind every area and every type of material available to the children, free of clutter and confusion—a truly beautiful space in which to display the ongoing work of the children as well as the documentation of their completed work. This environment was created out of the old and inadequate space that had been messy at its best. The amount of work that it took to create the environment was obvious and frightening to teachers of other grade levels who were afraid that they would be expected to duplicate it. Of course, they were not. One's own working space is as individual as one's home and the way one attires oneself. Some comments that came back to us, usually indirectly, were openly disdainful of the changes.

The Evolving Thoughts and Feelings of Parents

Anticipating Parents' Reactions

> *Fear is that little darkroom where negatives are developed.* (Michael Pritchard)

It is well documented that each person's response to change is different. And in the best of situations, "change is a given." Throughout our process of change, it felt important to bear in mind that every person's response to change is unique, and change often elicits fear. We suspected that our changing educational philosophy and program might stir up fears in some of our parents, and thus we approached the situation in as proactive a way as was possible. We did expect parents to have questions and concerns, and so we were not surprised when we started observing and experiencing this predictable and healthy reaction.

We looked first at the possible reasons that our parent body might fear a change in our program. Our goal was to take the parent perspective in an attempt to gain a greater empathy and understanding of the ways in which we might lead parents into a different way of thinking and being. It seemed likely that parents might be uncomfortable with change for a variety of reasons:

- *Parents wonder what was wrong with the old way of doing things.* To our parents, change may have meant that we believed that "the old way of doing things was not as desirable as the new and improved way." So did "new and improved" mean that we had been teaching their child in ways that were not effective? If the answer to this question were yes, we wondered how parents could trust that the new way of teaching would not one day be thought to have its own shortcomings. It seemed imperative that this possible fear be addressed in a very honest and informative manner. The idea should be to point out where and how certain traditional principles of teaching would be maintained and why and how innovative practices lend support to what is already working.

- *Parents are accustomed to product vs. process programs.* We realized that parents feel proud of what their young child can do. When their preschooler comes home from school with a paper that shows he or she can read, write, and calculate, parents are impressed and pleased. When a program emphasizes the underlying process of learning, parents no longer get to hold the results in their hands and thus are unable to mail results to grandma and grandpa or display results on the front of the refrigerator for all to see. This lack of observable results can be viewed as a loss. To alleviate this loss, we felt it important to teach parents how to look for a different kind of result, a result that is not always easily captured by paper and pencil but rather observed in their child's interactions. A goal was to teach parents how to observe and value their child's ability to solve problems, communicate, observe, listen, make decisions, delay gratification, cooperate, be kind, etc. Additionally, we strove to provide parents with literature that supported the importance of these observable skills.

- *Parents may not know where or how they fit into the new program.* We believed that with a program change comes a role change for parents. We expressed a desire to provide opportunities for parents to both observe and participate in a variety of ways during the school day.

- *Parents want to make sure this change is not a passing trend.* The pendulum swings, and what goes around comes around. Wise people are suspicious of change for the sake of change or for the sake of a passing trend. We felt it critical to articulate why and how our program was changing and to reassure parents that this change was trend-free. Our goal was to continue to bring parents back to a common ground—the mutual desire to create children who love to learn and learn to love.

- *Parents fear their child will not succeed academically.* Most parents were raised within a traditional educational model. Perhaps the most rumored and openly verbalized fear was that parents felt that their children would not succeed academically because they were not being taught in a familiar and traditional manner. This fear was predictable and understandable and one we chose to address openly through parent-teacher discussions and during one-on-one conversations.

While our list might not have covered every possibility, it certainly helped us to identify with those parents and then begin to develop a means to help them through the transition.

Helping Parents Deal with Change

> *Do not be too timid and squeamish about your actions. All life is an experiment.* (Ralph Waldo Emerson)

One of our first actions was to initiate a series of evening roundtable discussions. We hoped that these would serve two very important purposes. The first was to give us an opportunity to describe and demonstrate what the program changes meant in the day-to-day lives of the children in our program. Through a series of role-plays, teachers described how and what the children were learning. Over time, our parent's body language, questions, and comments grew to look and sound more supportive and comfortable with our educational philosophy. Initially, we knew that parents were "talking" and were not "on board" with what we were doing. Parents asked questions such as, "Will my child still learn how to read?" and made similar fear-based comments such as, "My brother's child is bringing home homework, and our son is not." Our commitment and compassion began to reflect success as the questions and comments of the parents changed, suggesting the parents increased understanding and support of what we were pursuing in the Early Learning Center.

This year, parents were given an index card and asked to write one goal for their child for the school year. These goals were written privately so that each parent felt a sense of privacy and confidence that they had a voice. Parent's goals for their children are often a reflection of how our present parent body accepts and supports our shift in philosophy. Previously, parents had primarily *academic or product-based goals* for their child. It would not have been uncommon to see, "I want my child to learn how to read or write." Now, parents' goals for their child seem more process based, suggested by words such as, "I hope that my child will learn how to make friends and solve problems."

We are grateful that the majority of our parent body has grown supportive and comfortable with our educational philosophy. We also understand and expect that parent-teacher relationships will always be an integral part of our program. Guiding parents through change takes time, education, and immense understanding.

The Evolution of Experiences: The Children

> *Creative activity could be described as a type of learning process where teacher and pupil are located in the same individual.* (Arthur Koestler)

Undeniably, we live in a world of "isms." While some of these "isms" are positive, many more are not. Racism, sexism, and ageism have received much of our attention in recent years with tremendous amounts of energy being poured into their abatement. The "ism," however, that teachers—and all adults for that matter—must become sensitive to is that of adultism.

In simplest terms, adultism refers to the practice of creating a world that discounts the child. We see it all around us—in public restrooms containing only adult-sized fixtures, classrooms with counters and other workspaces too tall for the children who use them, common household implements too large for capable, small hands to utilize, and military and other "adult" budgets far larger than that spent on the education and well-being of our children. Adultism reflects an adult-centered world where expectations of children's abilities are greatly underestimated. As early childhood educators, the opportunity exists to move away from an adult-centered world to one that emerges from the child. We recognized this opportunity as the origin of our philosophical evolution, and remaining "ever aware" has helped to guide our process of change.

In our earlier thematic and academic days, we saw a classroom bustling with activity. There were a few "activity centers" with some open-ended, but mostly single-purpose, materials. The real opportunities for creativity were to come in the form of children constructing elaborate "sets" to reflect the theme of the moment. There were always a few "good children" willing to follow our explicit instructions in order to construct some necessary elements. However, the interest would always begin to wane, and we would find ourselves subtly demanding participation. The role of "teacher-turned-warden" was an exhausting proposition. The end of the day was usually much awaited. Initially, we examined this problem from the perspective of the *unwilling child*. How could we constantly be bringing in children who needed so much direction and guidance? It was not until we began to pay attention to the cutting-edge work of local and international educators that we began to suspect that the *unwilling child* was actually the *unmotivated child*—a child uninterested and unwilling to pursue our teacher-initiated and directed activities. Following a trip abroad to study innovative early learning methods, we returned to the classroom in "observation mode." We saw, heard, and experienced things that had previously gone unnoticed. Our first breakthrough came just a few weeks later.

On a walk through our campus, the children noticed many hummingbirds hovering near flowers or landing in branches of the trees. We stopped to discuss what they noticed about the birds, to gain a sense of their understanding. Out of the conversation, we learned that the children believed that hummingbirds loved red and beautiful things, liked to play, and ate flowers. They wanted to entice the birds closer to our classroom. In the ensuing weeks, we discussed ways to accomplish this goal. It was suggested that a playground with "eating places" would be just what we needed. They began to graphically design this playground, showing all the parts they felt were essential to make the birds happy. Construction began after careful combining of the best parts of all the many ideas. This project continued for eight weeks with intense excitement and participation. No longer did the teachers need to push children into activities; the children were intrinsically motivated. Another interesting occurrence was noted: the children were measuring, counting, solving problems, creating, negotiating, drawing, and planning without need of teacher-directed activities or worksheets. These were our goals for the children, and they were creating the opportunities to hone these skills themselves!

It is two years later. We have studied and created clouds, rainbows, and tree houses; examined in detail our bellybuttons and faces; and theorized about the lives of dogs and snails. Our objectives have changed. Now, our goal is to nurture a creative, independent, social child. The academics will come. What we have done in the process benefits both the child and the teacher. We learn with them; we experience with them; we emerge with them. There is no safety in what we do. We must always be prepared for the unexpected. We, also, cannot wait to get to school each day! We are committed to the idea of a classroom as a pallet of raw material waiting to be spread and shaped. The children display excitement and wonder daily. They are fluent in many artistic languages, and they invigorate the lives of the teachers with whom they work.

A Process "In Process"

You have to leave the city of your comfort and go into the wilderness of your intuition. What you'll discover will be wonderful. What you'll discover will be yourself. (Alan Alda)

From the conception of the Early Learning Center program in 1975, through the quiet years of stagnation, and into the turmoil of change, there has been one common goal. That goal has been to create an environment in which children can feel safe, can feel loved, and can explore the world around them. We may not always have understood how to best fulfill these needs. We may not always have made the best choices. However, we never stopped searching, and we never stopped trying.

Just as a child is never a finished product, neither is our early childhood program. In the past three years, with the advent of new leadership, new enthusiasm, and new knowledge, we have been able to move rapidly toward our ideal. However, we will never stop looking for ways to improve. We will never stop studying and exploring. We will never give up our ideals. We will always put children first.

The great French Marshall Lyautey once asked his gardener to plant a tree. The gardener objected that the tree was slow growing and would not reach maturity for 100 years. The Marshall replied, "In that case, there is no time to lose; plant it this afternoon!" (John F. Kennedy)

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Note

*Quotations are taken from *Do It! Let's Get Off Our Buts*, by John Roger and Peter McWilliams (Prelude Press, 1991).

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Reactions to Visiting the Infant-Toddler and Preschool Centers in Reggio Emilia, Italy

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Abstract

This article discusses the reflections of an early childhood special education professional on her visit to the preschools of Reggio Emilia, Italy. After describing the activities observed, the schools' philosophy, and the schools' environments, the paper discusses how the schools work with children with "special rights" (i.e., special needs). The paper concludes with observations on the role of parents and the community, and lessons learned from the trip.

Introduction

I recently returned from visiting the preschools and infant-toddler centers in Reggio Emilia, Italy. My visit challenged my beliefs about early childhood education and early childhood special education and caused me to reflect on my experience of 29 years in the field.

Activities and Philosophy

The municipality of Reggio Emilia, Italy, has a network of 13 infant-toddler centers and 19 pre-primary schools. These centers are known worldwide for their philosophy of teaching young children through what they term the "hundred languages" of childhood—including graphic representations of the children's thoughts and ideas, and verbal, motor, musical, mathematical, ethical, imaginary, cognitive, and moral expressions, to name just a few of the other languages of childhood. Learning in the Reggio Emilia centers is connected with children's real lives. For example, each child has a mailbox, and messages and pictures are exchanged as a natural part of the school day. For younger children, a photo of the child identifies his or her mailbox. For older children, the photo plus the child's name is on the mailbox. Children see the postperson delivering mail to their homes and can make the connection between those observations and the way their mailboxes are used at school. In this way, the child makes a connection to real experiences in the world.

Daily tasks also provide opportunities for learning in a Reggio Emilia center. Children work in small teams to complete tasks such as setting the tables for lunch. The names of children are on the wall with moveable magnets. Each magnet has a drawing of a knife and fork, soap and water, and so forth. The list is posted each day to indicate different responsibilities for the children in the team for setting up, serving, and cleaning up after a meal. Food is a very important matter in Italy. These activities of the children reinforce the value of enjoying the meal, taking time to enjoy talking to friends, and sharing responsibility.

A basic assumption in the philosophy of the Reggio Emilia schools is that there is an important distinction between teachers *teaching* and children *learning*. Teacher-directed teaching is all about the teacher and what the teacher thinks the children need to know. Children may learn content and skills taught, but they may be of little meaning to them. When the learning experiences flow from the children's ideas, however, there is more likely to be a good match between what the children are ready to learn and activities offered in the classroom than in a teacher-dominated curriculum. This intersection between the children's interests and their activities is critical: first, because children are more likely to be motivated to learn when they are interested; and, second, because the tension in the classroom between teacher and children is likely to be lessened if children are more engaged. In this way, teachers are learning about how to support the children's learning. As they say in Reggio Emilia, the teachers and their students are moving together in the same direction. This situation is in contrast to the struggle some teachers experience in other schools in trying to get children to learn, when the intersection of the interests of the children and the goals of the teacher seem to resemble a car wreck! In Reggio Emilia, children are not assumed to be empty vessels to be filled with instruction; they are seen as ready to learn when the right, best, or most appropriate opportunities are offered.

There is a shared belief in Reggio Emilia that children have within them an innate understanding of how to relate to the world. The job of the teacher, then, is to nurture that ability so that the child can grow and learn. I was impressed by the genuine respect for children that I witnessed. For example, the teacher meets with the children in the morning to discuss the activities of the day. These discussions communicate respect for the ideas and preferences of the children. Teachers listen closely to children's discourse and strive to understand the children's interests. Believing that teaching is not merely the transmission of knowledge, but that the teacher is a facilitator of the child's learning, teachers exhibit flexibility in planning the day with the children. Teachers also attend to cues from the children about the point at which interest in a project begins to lag. The children's work is displayed artfully on the walls.

Children become researchers in the classrooms of Reggio Emilia by learning to ask questions and collect data with which to answer them. Teachers use the arts—including painting, drawing, and working with clay, natural materials such as leaves and shells, and recycled materials such as tubes and spools—as a vehicle for understanding the child's thinking processes. Teachers observe closely the ways in which the child uses the materials. Teacher observations include not only the child's attention to the materials but also the child's level of creativity and the questions he or she poses to the teacher.

The way that the child manipulates and combines the materials gives the teacher clues to the child's cognitive structures. Ongoing projects—usually in-depth studies of the phenomena in the child's everyday world—are central to the daily life of the center. These projects may last for weeks, months, or even a whole year. Some projects I observed were on topics such as water, light, bicycles, and growing vegetables.

Each infant-toddler center and pre-primary school has an *atelier,* which translates as studio or laboratory, which is filled with natural materials and art supplies. Many of the settings also have *mini-ateliers.* The *atelierista,* who works with the teachers and children, is a specialist in the graphic arts. This individual helps to plan weekly activities related to the project at hand. These activities might include helping children learn to express themselves in a new medium, such as clay, drawing, collage, painting, or sculpture. The infant-toddler centers share an *atelierista* with several other centers.

In addition to the *atelierista,* each center has a *pedagogista* who is available for consultation, planning, assistance with, and management of individual children one day a week for each of four centers. The *pedagogista* not only develops relationships with center staff, families, and children but also engages in problem solving with staff, exploring new options and reflecting on what is going on in the center. The pedagogista is instrumental in assisting the teachers in planning for children with "special rights" (i.e., special needs), which will be discussed later in this paper. In addition to high-quality interaction between teachers and children and support from the atelierista and the pedagogista, the environment in each center is referred to as the third teacher.

Environments

Some of the environments are breathtakingly beautiful. The environment of each center supports the imagination and creativity of each child. The inside of the center is warm and calm (no primary colors jump out at you), featuring wood, glass, and muted colors. There is space to be alone, yet the environment encourages children to interact with others. Every center has a welcoming area with comfortable adult-size chairs for parents to give a last cuddle before saying goodbye for the day. The centers are very inviting and beckon you to come in and play. Each center contains many real plants and flowers, a kiln, kitchen, piazza, dining room, toileting rooms, and garden areas.

One interesting and unique feature of the centers is the light table, which is a table with lighting underneath a glass or Plexiglass cover, used for drawing and related activities. Overhead projectors are used by the children for projecting colors or pictures on the wall. At one center, I also saw computers and scanners that were intended for the children who were working with animation. In infant-toddler centers, the changing and bathing rooms are equipped with several waist-high tubs for bathing. The environment does not look institutional in color or type. It seems much more like a home environment than an institutional one.

Classrooms do not belong to individual teachers. All staff members work together and plan together. The weekly planning time includes the cook and other staff in the center. There is no staff hierarchy, so everyone is included in planning and working with the children. There are two teachers for each age group (e.g., for 3-year-olds). However, some centers have multiage grouping with classes of about 20 children. If a child with "special rights" (i.e., special needs) is in the class (only two are allowed per class), another teacher is added to the class. This additional teacher works with all children in the class, not only with the child with special rights.

Documentation of children's learning is everywhere, usually in the form of large photos of two or three children working together on a project with text about what the children are doing, thinking, feeling, wondering, and questioning. This documentation is revisited many times in order to review where the children were at the beginning of a project, where they are going, and what they have learned. Mobiles of natural materials made by the children hang in many of the rooms. Frescoes and large murals are displayed on walls. In one center, string hanging from the ceiling, rather than room dividers, marked off areas of the room.

I saw no plastic or cheap toys. The environment has wood floors and many wooden toys. The doors are partly glass, in order to be able to see easily from inside to outside and from room to room. All the materials I saw were from the natural world or the recycling center. Wooden blocks were in each center. Often, I saw very intricate block structures (which had obviously taken children many days to complete) in the foreground, with the overhead projector casting colors or pictures onto the wall behind the blocks. A variation of this was the slide projector showing, for example, a scene of a meadow, with the block structure looking like a part of the meadow. Homemade puppets and a puppet theater made by parents are in some centers. In some centers, a sheet was hung from the ceiling for shadow play. This sheet could be rolled up when not in use.

The *atelier* and *mini-atelier* have a beautiful array of art materials, including colored pencils, markers, watercolor paints, materials for collage and sorting (usually in a box with sections, each section containing different materials such as dried red peppers and beans), pencils and pens of different kinds, and various colors and shapes of paper. These are very inviting spaces. I wanted to sit down and draw! Trough sinks are in the bathing, changing, and toileting rooms. These low spacious sinks with several spigots allow children to easily reach the tap and stand close together while washing hands, or engage in water play. The floors are wood, but there are also small carpeted areas. I saw inviting, comfortable book corners and housekeeping areas with baby dolls very much like you find in infant-toddler or preschool centers in the United States.

The outside environments are also interesting. I saw areas for water play, hills with climbers, a child-size maze of small trees planted by the parents, and picnic tables.

Children with "Special Rights"

Children with "special rights" have priority in enrolling in the Reggio Emilia schools. Children with special rights are included in all of the activities with other children. Every effort is made not to call attention to the special needs of the child; therefore, I did not see much adaptive equipment on my visit. One day, I saw a child with a motor delay walking with the help of the teacher but no walker. My understanding is that adaptive equipment is used when needed. The teachers try to set up the environment so it is easy to navigate for the child with special rights.

The Reggio Emilia schools work with children with special rights in a very responsive way. For example, one child with autism was allowed to roam around the school for several months while the teachers observed her to find out what was interesting and motivating for her. The staff noticed the child was interested in light. They began to offer her opportunities to experiment with light, and eventually she started to interact with another child at the light table. Continuing the interest in light, the child with special rights interacted with another child while experimenting with a prism. Reggio Emilia staff believe in starting with all children "where they are." This strategy requires knowing the child well and having good communication with the child's family about the child's interests. The Reggio Emilia staff believe that finding out what motivates a child is worth more than hundreds of meaningless exercises. Observation is used extensively for children with special rights, as with all children, in order to gain insight into the child's thinking process and understanding of self. The *pedagogista* is a helpful resource to the staff in adapting activities and materials for the child with special rights.

I asked about the interventions used to address behavior problems, a common concern of teachers in the United States. The Reggio Emilia staff reported having few behavior problems, primarily because the children are so engaged in learning. If a child is having a tantrum or other behavioral issue, there is no punishment. The staff try to empathize with the child, verbalizing the feelings the child may be having, trying to help the child understand these feelings. Teachers report looking for clues for the behavior beyond the child's outward signs in order to figure out what is going on. They consider behavior problems as an indication that the child is upset in some way and needs support. Because of the European philosophical heritage based on the psychodynamic model, Reggio Emilia staff have a philosophy that is decidedly nonbehavioral, and time-out is not used in the centers. Staff discuss these issues with the child's family, if they come up. Another strategy often used in the Reggio Emilia schools is making reference to the child's positive traits. Self-knowledge and self-understanding are major goals for young children in the Reggio Emilia schools. Every interaction with an adult is intended to facilitate the development of a child's self-knowledge and self-understanding.

The Reggio Emilia philosophy, in which each child is accepted for his or her unique learning style, facilitates acceptance of all children. The continuum for acceptable behavior is quite broad. A child who is very active is not seen as a problem but as a child who needs to move around during the day, and adaptations are made for that child. Drugs are not given to children for behavior problems. Adaptations are made in the environment through thoughtful observation of the child. Children are valued because of their differences and are not medicated or expected to change. This assumption fosters a flexible and adaptive attitude that children and families find very supportive. This attitude also supports the process of assisting the children in developing self-knowledge and insight about their own learning style, interests, and strengths.

Reggio Emilia staff often discuss the use of wait, watch, and respond as a strategy to use when working with all children—especially children with special rights. Because funding for the Reggio Emilia schools is not based on labeling children, children are always treated as children first. If the child has a documented disability, such as Down syndrome, this fact is noted. The child is observed, and documentation is developed about the child's strengths and areas of concern. A formal document is developed, called the "declaration of intent," which is a written agreement between the school and health authorities to ensure collaboration. Parents are included in this collaboration with every step of the development of the "declaration of intent." This document is flexible, providing a direction for the education of the child with special rights. In addition, a portfolio is developed for each child with special rights, as it is for all children in Reggio Emilia schools. This portfolio documents the child's progress over time in all developmental areas. Copious observation notes are collected about each child as well.

I think the services for children with special rights are carried out in a very thoughtful manner. The naturally occurring environment for all children is adaptive and inclusive. The goal for all children is to emphasize the value of differences rather than the stigma associated with disability.

Parents and Community

The parents of the children in the centers are essential participants in all planning and in many activities. They are on local and community advisory boards, and some parents volunteer in the centers. Parents help with projects, discuss projects with their children, and help children gather information for projects. On our visit, we met parents who seemed very engaged and pleased with the educational experiences for their child. An essential component of the Reggio Emilia philosophy is creating a community of caring adults who value children.

The Emilia Romagna region in which the small town of Reggio Emilia is located is in a part of Italy that has been governed by socialists since World War II. This philosophy is evident in the Reggio Emilia schools and community. Individual needs are balanced by the needs of the group. The community support for the schools is remarkable. The town supports education with a large portion of its budget—indicating the high priority in which children, families, and community are held. Also, in Italy, there are strong cultural beliefs about the importance of family. These philosophical and cultural values provide the rich context of support for the Reggio Emilia schools.

Reflections

The following statements are a summary in "telegraphic" language of what I learned from my visit to Reggio Emilia:

- Take time to listen; know what you are listening for.
- Listen to each child's melody.
- Provide space and time to be alone.
- Accept the premise that learning need not be lonely.
- Recognize that dialogue is more valuable than singular thought.
- Keep boredom away.
- Value the process of thinking.
- Ask "Why?"
- Help children ask "Why?"
- Question everything.

- Seek truth, but realize there is no one truth.
- Accept and value differences.
- Shun the stigma associated with disability.
- Have a profound respect for each child.
- Look further into the reasons for a child's behavior, rather than just the external signs.
- Recognize that it is all about relationships.
- Reflect.
- Understand the importance of enjoying food and rest.
- Observe, document, and interpret.
- Wait, watch, and respond.
- Recognize that documentation is visible listening.
- View the child as the protagonist in the environment.
- See the teacher as a facilitator and guide assisting the child in learning.
- Understand that instruction and education are different.
- Do not hurry the children or yourself.

These are questions I asked myself about my work with children and families:

- Do we value and respect all of the various ways children express their thoughts and feelings?
- Do we value equally the verbal and the nonverbal child? The arts? The rational thinker as well as the creative thinker?
- To what extent have artificial labels been developed for children who do not fit into our educational system and its narrow perspective of learning. This narrow perspective rewards highly verbal children who can sit still and do their work.
- What are ADD and ADHD if not different styles of learning?
- Do we label for our own convenience?
- Do we medicate children instead of looking at our own practice and the environment we create and make changes there?
- Do we listen to what children say with their words? Their behavior? Their body language?
- Do we reflect enough? Do we take time to reflect?
- Do we interrupt the thinking processes of children when we adhere to a rigid daily schedule? Do we actually lessen their attention span in this way?
- Do we carry out meaningless activities for short periods of time during the day that are not connected to the child's real world and experience?
- Do we really value families?
- Could we observe children more often in their daily routines?
- When we assess, do we use the information in planning educational experiences? Or do we primarily utilize the information to label the child?
- Do teachers teach or children learn?
- Do we pay enough attention to a child's motivation for learning?
- Do we pay enough attention to a child's strengths?
- How do we help children understand themselves?

My memories of my Reggio Emilia visit are filled with beautiful images and many questions. Yet, I feel very calm with the knowledge and experience I gained in Italy. Now, I am working to share my understanding of the high-quality early childhood education and early childhood special education that I witnessed there. Yes, I believe that we can learn from Reggio Emilia. Such important basic ideas as taking time to listen to and observe children, valuing and respecting children, involving families, valuing differences rather than perpetuating stigma, and being open as a teacher to learn along with the children as they investigate real-life questions through projects are worthy of our consideration. Building strong community educational networks that are supportive and nurturing for all children and families, regardless of social class or cultural and linguistic background, are possible and desirable. But, first, children and families must become a priority.

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Reflections and Impressions from Reggio Emilia: "It's Not about Art!"

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Abstract

This article discusses an early childhood program administrator's reflections on her visit to the preschools of Reggio Emilia, Italy. The following six themes are discussed: (1) teachers' respect for each child; (2) teachers' emphasis on relationships; (3) the importance of art as the medium chosen to represent children's thinking; (4) the critical role of communication; (5) the relaxed pace in the schools; and (6) the teachers' different roles. The article concludes with ideas and questions inspired by the visit that the administrator would like to share with colleagues in a gifted education environment.

Introduction

I recently returned from a 12-day study tour of the preschools in Reggio Emilia, Italy. With 250 other American educators, I listened to the educators of Reggio Emilia talk about their system of educating youngsters in their municipal preschools and infant/toddler centers. I visited a total of 7 facilities out of 34 infant and toddler and pre-primary centers, with children being present during only two of those visits. Teachers, parents, *atelieristas* [artists], *pedagogistas* [curriculum specialists], and even the mayor of the city spoke to us about the schools and the teaching that goes on in them.

I noted all aspects of the school environments—the documentation displayed on the walls, the furniture, the way various things were placed around the rooms, the materials available to children and adults, the bathrooms, the kitchens, and the play areas. I wrote down all that was translated for us about everything from the huge documentation murals to the teacher's planning sheets posted in the classrooms. I was awestruck by the way that the pieces fit together to make Reggio Emilia early childhood programs exemplary. To help me make sense of all the pieces, I have divided what I learned into broad themes.

Theme 1: Respect for Each Child

Respect for the child was an overarching theme throughout all the discourse and presentations of the study tour. It was expressed in the following ways: "The child is worthy of being listened to." "Listen, observe, interact, and learn from the child." "Do not place the child in adult-designed or arbitrary time slots of adult management systems." "If the child is misbehaving, find out why, find out what the child is trying to communicate, find out how you can help the child." "Your job as an adult is to help the child communicate his feelings and guide the child toward a positive resolution of the problem." If this philosophy and belief system were the norm in the United States, there would be no place in early childhood programs for assertive discipline plans, time scheduled in half-hour blocks, lines of children waiting to go to the restroom, lesson plans filled with activities for large groups of children, teacher-made patterns for children to trace, or children talking back to teachers. Instead, there would be more opportunities for teachers to talk individually with each child, more time for teachers to consult with other teachers or parents about the child's interests or behaviors, more opportunities for children to display their strengths and unique learning styles, and more visible displays of children's work in classrooms.

Over and over again, I was impressed with the notion that the teacher is one of the learners. The teacher is trying to learn about each child, not just what is typical of 3- or 4-year-olds. Two examples illustrate this theme:

The first example was revealed during a presentation about the differences between boys' and girls' perspectives on developing a plan for a city. Giovanni Piazza, an atelierista, explained how two boys worked together for approximately 30 minutes before a third boy joined in. Sitting with his hands on his cheeks, the third boy observed the other two as they worked together. Only after one of the boys drew a road toward this third child did the third child initiate working with the other two. I could imagine that in an American classroom a teacher might have intervened much earlier to coerce participation and collaboration. Many American teachers might have had difficulty respecting the time needed for the third boy to join in. Most American teachers have agendas and preconceived notions of what ought to be for each child.

Another example of this philosophy and attitude of respect toward the child became evident in a presentation about children with special rights (their term for children with disabilities). The presenter demonstrated how the team of teachers worked together to address the needs of a child with autism. For a year, they observed the child closely and documented what she enjoyed doing while she was at the center. They noticed that she had a keen interest in light, so they arranged the environment to give children opportunities to experiment with light sources. Children used flashlights to play with shadows on the wall. They drew pictures on overhead projectors to enlarge them on the wall. Then the teachers designed a device for the child, who had begun to draw on the acetate on the overhead projector, that allowed her to draw on acetate positioned like an easel with another child just on the other side.

The two children were physically close. The child chosen to paint alongside the child with autism was not too far ahead of her verbally and had not shown any difficulty in working with her. By designing the environment and the activities that could take place within the environment, teachers engaged the child with autism in the everyday activities in the classroom, including drawing, social interaction, and celebration of accomplishments. The teachers were patient. They reported that it took nearly two years for the child with autism to become socially integrated into her peer group.

Theme 2: Teachers Emphasized Relationships—Understanding Relationships Involves the Highest Levels of Thinking

In a small art studio off to the side of one classroom, I noticed a book opened to a picture of the Milky Way galaxy. I thought that the children were studying about space. Other objects in the room included a bicycle wheel and an orange. On a large documentation board in another area of this classroom was a photograph of the bicycle wheel and the orange. I asked one of the teachers about the project that the documentation board described. She responded that the children were examining carefully the relationship between things that are found in nature and things that are man-made. In particular, the teachers asked the children, "What structure connects all other structures?" The children were observing the similarities in the physical structure of the objects, such as the sections of the orange and the spokes of the bicycle wheel.

These children were certainly exhibiting high-level thinking. Seeking relationships, comparing and contrasting, and pursuing similarities and differences are all strategies that engage the mind in high-level thought processes. The children were not, as I first suspected, studying factual information about space, the galaxy, or spiral objects.

The same was true with the study of the city of Reggio Emilia. When Giovanni Piazza described the boys' city as one that was functional and the girls' as one that involved social relationships, I wondered why the teacher did not intervene and draw their attention to "real aspects of cities" (i.e., they all must have electricity, water systems, sewer systems, etc.). The study was not about facts of cities. It was about the relationship of cities to the people who lived in them. In the context of their study of the town of Reggio Emilia, the children learned many facts about their own city, including many historical events that shaped the history and the development of their city. They made representations of the relationship of the city to their own lives. The study of the city was undertaken by all of the schools in the municipality, not to tell the same story about their city, but to come to understandings about how their city related to the children's own lives.

Theme 3: Art Is the Chosen Medium to Represent Children's Thinking

Much of what we see in exhibits of work coming from Reggio Emilia depicts the children's drawings, murals, 3-dimensional structures, and other forms of artistic products. It is easy to come away thinking that if we only had this type of art expertise in our classrooms, our children's products would be of equal quality. However, I have come to the realization that *it's not about art!* I saw how the teachers focused their attention on what the children were thinking and learning. I saw the teachers' complex system of planning and documenting what the children were thinking about various topics. I saw what I termed the "art medium" used to advance thinking and present challenges.

The teachers referred to their use of "graphic languages" to make the learning experience "visible." Carla Rinaldi talked about the "Pedagogy of Listening" using documentation as a visible form of listening. Without the careful attention to how ideas are represented, and the use of the art expertise, the children's work would be less visible to themselves and to the wider public. The graphic arts, broadly defined as any form of visual artistic representation, are their chosen media to share with others what children are thinking, doing, feeling, learning, and experiencing. They teach children art techniques to give them tools to express their ideas.

Being artistic and creative is highly valued in this school culture. Large space is allocated to art studios, called *ateliers,* for the school. Each classroom has a small art studio, *mini-atelier,* connected to it where art materials are plentiful and accessible to the children. Aesthetically pleasing environments are designed purposefully. The *ateliers* in each school are filled with recyclable materials (e.g., glass beads, pipes, sockets, ceramic pieces) and natural elements (e.g., rocks, stones, beans, barley, seeds, seed pods, dried flowers). All of the materials are laid out aesthetically on open shelves and in clear containers, creating hues of colors to behold. In the bathrooms, there are glass containers of colored water. Calder-like mobiles hang from the ceilings with materials that reflect light such as clear beads, tin foil, and coins. Dividers are made out of transparent materials including acetate murals, strings of beads, and low, see-through shelves. Furniture provides space to work at all levels, including tables and chairs that are at adult heights. Children have high stools to sit at the high tables and small chairs to sit at the low ones. The difference in levels is aesthetically pleasing.

The children's work in progress is left out, reflecting active and ongoing engagement. Teachers carefully lay out materials for the next day's choices of activities. Materials are chosen thoughtfully. In one room, I noticed the teacher in her *mini-atelier* working with a small group of 4-year-olds. The children were painting representations of flowers. The teacher had premixed four shades of pink for the children to use. No matter what the children did with the paint, the colors were beautiful! I saw the teacher put her hand on a student's hand to help him wipe off the paintbrush so paint would not drip. I saw a teacher go to another part of the room to get a child who was engaged in another activity to come into the *mini-atelier* to work on a clay representation of a tree. It was something that *she* wanted him to do.

In another school, I saw large murals of colored designs in different hues of color. One contained oranges and yellows. Another was a mural with pinks and purples; another contained blues and greens. The *atelierista* told me that she mixed these colors for children to "experiment with the pleasures of working within hues of colors." There were signs on the wall about how to mix colors. One board that was displayed in the *atelier* explained in great detail all of the ways one could mold clay to create spirals, circles, rectangles, triangles, the sun, and crosses.

Many of the students' investigations were about natural phenomena. I saw an ongoing study of trees. While making clay representations of trees, the classroom teacher helped children learn the technique of using water and clay mixed to form a glue that held other clay pieces together. The other teacher in the same room showed children how to use a real leaf to make an imprint of the veins onto a clay piece. Children had many opportunities to learn, practice, and apply techniques related to visual arts.

Their artistic representations were highly valued and were the basic medium for the public to view their work. I bought a book from one school that contained children's drawings of trees and quotations about their drawings. Each school sells a book about the school, called the "Identity Card," which includes floor plans, numbers of children, staff hours, recent and past projects, and other information. Many schools sell other artifacts, sharing the children's work with the world. Artifacts include bookmarks, T-shirts, sweatshirts, books telling the story of their projects, and posters of children's drawings.

I saw beautiful mosaics at one school where the *atelierista* specialized in both science and art and had a particular passion for working with natural materials. The mosaics were done on glass-covered tables—not glued but carefully placed in a background of small seeds. The texture was like sand. Each mosaic could be done again and wiped away with a block to smooth the palette. Children were carefully building structures with stones, marble scraps, blocks, and other materials while I was there. I observed children explaining their building structures to all of the other children under the teacher's direction. I was most impressed with the *atelierista's* guidance of an activity with an insect. He put a dead insect under a large magnifying glass and projected the enlarged image onto a video screen. He provided black markers and white paper for the children to make an observational drawing from the large screen image.

If the people from Reggio Emilia used another art form such as music, would their work be as visible to the world? Would songs flow forth and children's compositions be sold to visitors? If the people from Reggio Emilia hired a dancer and built a dance studio in each school, would their thinking be visible through movement? Would dance concerts be routine events at the end of the day? Would videos of dances be the visible medium for teachers' reflections? Although I cannot speculate upon the answers to those questions about schools in Italy, there are examples of other schools (i.e., schools for the performing arts) in the United States and abroad that do focus on other art forms and that do strive to make their students' thinking visible through other "languages." It is interesting to note that most of the schools that specialize in the arts in this country are secondary schools, and their primary goal is to cultivate the talents of students in those specific art forms.

Graphic languages, the *atelierista,* and the *atelier* are all critical to the goals of the philosophy and belief systems in Reggio Emilia. Art is the medium by which the educators in Reggio Emilia are encouraging the children to communicate. It is the medium by which their teachers "listen" to the children.

Theme 4: Communication Is Critical

The documentation boards in every room are examples of the value that the educators in Reggio Emilia place on children's work and on communicating with others about the children's experiences. Each documentation board has photographs of children working, samples of children's products, and text describing some aspect of what the children are doing. Most of these documentation boards are completed by the *atelierista* and demonstrate graphic design expertise. The teachers from the infant and toddler schools told us that they do their own boards and are much slower in getting them up for parents to see. Documentation boards have a white background and are consistent across schools in style and function.

In addition to having documentation boards in the room, teachers also keep a daily journal in which they communicate to parents how their children spend time during the day. The journal includes a diagram depicting areas of the classroom where children spent most of their time, students' drawings, and some text reflecting what children said they were thinking about specific topics on a given day.

As discussed earlier, the focus on the graphic languages is a means to help children communicate about and wrestle with their ideas. The environment in the classrooms is conducive to dialogue and exchanges of ideas. Because children are working in small groups, teachers have time to record what children are saying and to reflect on these conversations at a later date. Teachers have time to talk with small groups of children.

Theme 5: Children and Adults Are Not Hurried

At no time did anyone appear to be in a hurry during my trip to Italy. It may be a part of U.S. culture to be constantly hurried. Most American teachers feel the pressure to cover required content. Time is fragmented in most American schools. Teachers rush from one activity to another, especially within the structure of American elementary schools, where children's activities are dictated by schoolwide master schedules that fit classes of children into music, P.E., lunch, art, and so forth.

Schools in Reggio Emilia are small enough for all of the children to eat together. All of the children may go out to play at the same time (and without teacher monitors!) because the outside play area is within view of the teachers in the classroom. Children that I observed flowed from one activity to the next. I did not see a schedule posted on the wall. I was told that they have a group meeting in the morning, a work period, a play period, a lunch time and playtime, a nap time, and another work time or playtime. What does not get completed in one work time may be completed in the next work period. Children are not urged to hurry to complete a project because teachers are not trying to initiate a different activity.

From my perspective, there seems to be a relaxed approach to the way time is used in the Italian culture. Getting engaged in something at a deep level takes time—weeks, months, even years. Initially, when topics are brainstormed, the staff thinks about them in terms of the academic year. What topic might they like to spend the year pursuing? This approach does not mean that every topic is preplanned for the year. However, by thinking about topics with long-range possibilities, teachers are not rushing students from one topic to another. Their flexible use of time allows students to spend whole mornings with the *atelierista*. The *atelierista* does not have to fit all of the children from one classroom into his or her schedule—unlike our typical art teacher's schedule where each student has to have so many minutes in a special class. The *atelierista* is not used as a break for the regular classroom teacher. *Atelieristas* are valued members of the community of teachers. They decide with the teachers who needs their help with a particular aspect of a project, and they usually work intensely with no more than half a dozen children for about an hour and a half per day.

Theme 6: The Teacher Has Different Roles

The teacher in Reggio Emilia is the researcher, the data gatherer, the learner, and the strategic contributor to the child's capacity to learn. The responsibility is on the community of teachers to provide the contexts for learning. I observed one teacher taking notes and watching a small group of children playing in the dramatic play area. I was intrigued with a planning matrix that I saw on one of the walls in a *mini-atelier*. The matrix articulated the contexts in which the teachers would observe and listen to the children. It described how the teachers would document what they were looking for within a given context. It also detailed skills, attitudes, and dispositions that they were looking for, including a child's sentence structure, choice of friends, attention span, how the child holds his paintbrush, his ability to wait for his turn, if he remembers who is absent, and so forth.

The curriculum emerges with purpose, direction, and detail. Teachers constantly gather information about what is emerging. One statement on the planning form was translated to me: "In relationship between story and everyday experiences of children, the theme of feelings has emerged. Feelings are about friendships, love and affection, happiness, anger, hate, conflict, sadness, and fear." Most definitely, the role of the teacher was not just to impart facts and knowledge. The role of the teacher was to help children come to understand the relationships of things around them to themselves. Teachers wanted children to learn "big ideas" such as community, respect, and competence.

What Does It All Mean to Me?

As an administrator of an early childhood program, I take from Reggio Emilia some ideas that I want to implement, some that I want to convey to those with whom I work, and some that I want to think more about. Naturally, the things that can be implemented are those on the surface of their approach. I agree with what one speaker told us, using words from *The Little Prince* by Saint-Exupery, "What's essential is invisible to the eye." In Fullan's words, "You can't mandate what matters" (Fullan, 1993, p. 21).

There are a number of things I can try to implement and share with colleagues and co-workers:

- I can strive for more aesthetically pleasing environments in our classrooms. I can ask teachers to examine their classrooms for clutter. I can bring someone into the rooms with more experience in the field of aesthetics to help us create classrooms that are functional and beautiful at the same time.

- I can look for more recyclable materials and have teachers create spaces that resemble an *atelier.* I can emphasize the importance of having these man-made and natural materials available for the children.

- I can work with teachers on ways to inform parents and the community about the learning and the experiences that children have at school; for example, getting help with documentation boards, having more parental input into our topics of investigation, and distributing an informative pamphlet about our school with recent and current projects described.

- I can make better use of technology and strive to make that technology available to teachers, students, and helpers. I am definitely interested in exploring ways we can use scanners, videos, and software to further develop and extend the ideas of the students.

- I can share the concept of the entire school community with the teachers at my school so that they let go of the concept of "the classroom" as its own entity. By establishing the school as one community, human and other resources across classrooms can be shared. Responsibility can also be shared.

From the Gifted Education Perspective

I believe there is a strong relationship between teachers' values and beliefs and how teachers define their role. I have been immersed in the field of gifted education for more than 20 years and have articulated some of those beliefs about children that teachers of children of high ability generally possess:

- They assume their students are capable.
- They believe their role is to help their students fulfill their potential.
- They believe they should engage their students in higher levels of thinking.
- They believe they should allow opportunities for students to pursue their interests, talents, or passions.
- They view themselves as facilitators of learning.
- They respect the talents of their students.
- They believe their students are unique and have different learning style preferences.
- They believe that learning should be challenging and intrinsically rewarding.

Based on these beliefs, educators trained in gifted education tend to provide opportunities in their classrooms for students to work at varied paces, on different projects, and in authentic and meaningful ways. Gifted programs tend to include project investigations and opportunities for children to engage in in-depth studies. Therefore, I found the values that were conveyed in Reggio Emilia complementary to those that educators of gifted students would likely hold, with perhaps one exception. In gifted education, we tend to focus on individual needs, interests, and abilities. In Reggio Emilia, teachers highlighted group work, group products, and group studies. Documentation boards, however, contained pictures of individual children engaged in thinking through a problem. I need more information to draw conclusions about the delicate balance between individual and group effort in the Reggio Emilia environments.

I would like to know what values and beliefs teachers must hold to implement the philosophy of the teachers in Reggio Emilia. Which values and beliefs are most compatible with the researcher role that teachers play in Reggio Emilia? If teachers valued children's thinking about big ideas and relationships, would they see the fallacy of teaching all children the same thing at the same time—expecting all children to learn the same thing? If teachers held as their goal for children that they become better members of a community, would they engage in practices that enhance competition?

Two burning and related questions I take away from Reggio Emilia are: (1) How can we, as teacher educators, change teachers' practices from creating passive learning environments to engaging children in active, meaningful activities? and (2) How can we, as teacher educators, change the role of the teacher in the United States to become a facilitator and enhancer of learning? How do we help people change their belief systems, which ultimately affect their practices? What are the relationships between practices, values, and beliefs?

What are the conditions that need to exist for teachers to deepen their understandings of the effects of our conventional practices? What can I do as a teacher educator to "provide the context" for this type of change in teaching philosophy and style? How can we create communities of teachers, as they do in Reggio Emilia, who value their students' ideas and value the way children come to learn about the world around them?

I want to go back to Reggio Emilia. I have only scratched the surface of what I learned and observed there. I want to learn more about how their projects are initiated, how different children decide to do different things, how teachers have time to listen so intently to what children are saying, how teachers and staff members work so cooperatively in their school community, how children enter into a project with the *atelierista,* what concepts they want children to gain from being engaged in a study, and how they evaluate their work.

When I visited the Documentation Center, an office that collects documentation from the schools, the speaker whet my appetite for dialogue about evaluation. She explained several things that they examine at the Documentation Center:

- What topics are more frequently used for children?
- How do we cover 100 languages?
- Are some schools keener on some topics than others?
- Have we increased our ability to communicate?
- Is the documentation just a record or is there an interpretation?
- Is the documentation just description or does it go to another cognitive level?
- How does the documentation reflect each school?

I am intrigued by these questions and want to continue my study of Reggio Emilia.

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The Combine Project: An Experience in a Dual-Language Classroom

Rebecca Wilson
West Elementary School, West Liberty, Iowa

Abstract

This article describes what happened when a bilingual kindergarten class in West Liberty, Iowa, investigated a combine. The dual-language program supports content area instruction in both Spanish and English. The first part of the article tells the story of the Combine Project, this class's first project work. The story begins with a typical kindergarten field trip to a farm and ends with a parent night to show a combine constructed by the kindergartners. The second part of the article discusses the teacher's reflections on learning how to guide projects. Reflections by the teacher include relating kindergarten goals to projects, supporting second-language learners, involving parents, and including children with special needs.

School and Background Information

The students involved in the Combine Project were in a bilingual kindergarten class in West Liberty, Iowa. The kindergarten class meets full day for 6.5 hours. The day is divided into approximately 1.5-hour increments, not including recesses or lunch, in which the language spoken in the classroom is either Spanish or English. For example, on Monday, the class begins in Spanish, switches into English right before lunch, and ends in Spanish toward the end of the day. The next day, the pattern is repeated, but the class begins in English.

The class population is diverse, consisting of 11 native English speakers and 10 native Spanish speakers. The goal of the bilingual program, for both Spanish and English speakers, is maintenance of native language development while learning a second language. There are children with Individualized Education Plan (IEP) goals integrated into the class: one with a severe language delay, requiring a full-time aide, and another with Asperger's Syndrome. All of the children were able to participate in and contribute to our work on the Combine Project.

The Project Approach was first used in the dual-language kindergarten last year. This year, 2000-2001, I began with an informational night for parents on the Project Approach. The informational night was held about three weeks into the school year. The parents were given a short presentation on how the Project Approach works, how it fits into the standard school curriculum, and how they could help support this method of learning. After the presentation, parents were invited to walk around the classroom and look at documentation from the projects the kindergarten class had completed last year.

The Combine Project

Project Background: Phase 1

Our project began with a trip that all the kindergarten classes in our school district take to a nearby farm every fall. During a group discussion with the children, we made a web on large chart paper, indicating their thoughts about the farm and what they thought they might see on our visit. After their visit to the farm, I used a different-colored marker to record their new contributions to the web. Many of the children's new comments were related to the animals they had seen on the farm. However, one child thought of a tractor as an additional idea to include in our web; this addition led another child to think of corn. The comments they were sharing with me rapidly started turning into questions about the process of growing corn and the tractors. At this point, I decided to follow their new interest in grain farming, rather than animals, and arranged a visit to Billie Danner's farm to watch soybeans being harvested by a combine. (Mr. Danner is the father of a child in my class. After the informational night on the Project Approach, he had told me we would be welcome to visit his farm any time.) Figure 1 shows my initial teacher planning web. The main focus of the project became farm machinery.

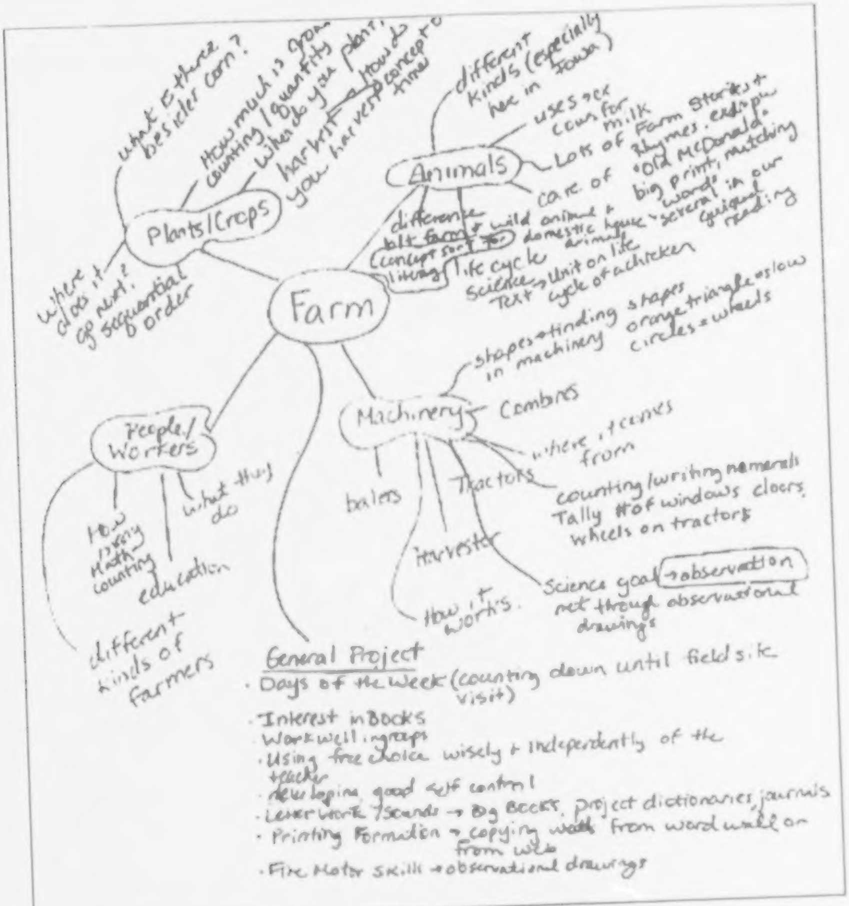
Farm
Plants/Crops
what else is there besides corn?
How much is grown counting / quantity
When do you plant, harvest
How do you harvest
concept of time
where it goes next? sequential order
Animals
different kinds (especially here in Iowa)
uses see cows for milk
Lots of Farm Stories + Rhymes. ex: "Old McDonald" big print, matching words
care of
several in our guided reading
difference b/t farm + wild animal + domestic house animals
concept sort for literacy
life cycle
Science Text → Unit on life cycle of a chicken
Machinery
shapes → finding shapes in machinery
orange triangle = slow
circles = wheels
Combines
where it comes from
counting / writing numerals
Tally # of windows, doors, wheels on tractors
Tractors
balers
Harvester
How it works.
Science goal → observation met through observational drawings
People / Workers
How many Math counting
education
what they do
different kinds of farmers
General Project
· Days of the Week (counting down until field site visit)
· Interest in Books
· Work well in groups
· Using free choice wisely + independently of the teacher
· developing good self control
· Letter work / Sounds → Big Books, project dictionaries, journals
· Printing Formation → copying words from word wall or from web
· Fine Motor Skills → observational drawings

Figure 1. Teacher planning web.

Before going to the Danner farm, the children asked many questions about what they thought we might see during the visit to the farm. To help jog their memory of the initial farm field trip, I replayed a video that one of the parents had recorded. I found the video to be a very useful tool to prompt discussion.

The following questions were generated by the children after our first field trip to a farm before we had done any field site visits. In order to help the children see what might be appropriate to ask Mr. Danner on our field site visit, I separated the questions into those having to do with livestock and those having to do with grain farming. Many of the questions about animal behavior and births were answered by children before visiting the Danner farm, mostly through reading nonfiction literature. The questions involving what animals eat, which greatly interested the children, were answered by Mr. Danner on our field site visit when he brought out buckets of animal-grade corn and explained which animals ate it.

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Livestock (Animal) Questions

McKayla/Jorge: Why do pigs eat corn?
Jessica: Why do horses gallop? What do horses eat?
Irving: What do cows eat?

Kathy: How much corn do animals eat?
Payton: How do cats get babies?
Morgan: Why do pigs roll in the mud?
Lolita: What do sheep eat?
Breanna: Do cows eat the same things as dogs?
Daniel: Why do cows drink milk?
Michelle/Josh: What do you feed a chicken besides grass?
Ariel: What do horses eat?
Alexis: What sound does a goat make?

Questions We Could Ask Mr. Danner (Grain Farming)

Bianca: How many people are in the farmer's family?
Anahi: How many wheels do the tractors have?
Christian: How long does corn grow?
Kennedi: How do you drive a tractor?
Javier: How do you get the corn out (of the ground) when it's ready for eating?
Tracy: How much does a tractor cost?

In preparation for our visit to the Danner family farm, a tally sheet was introduced to the children during a math lesson. The children were given photos of John Deere tractors and combines, as well as tally sheets of possible items they might be able to count on the machinery. The tally sheets included pictures and written words for wheels, lights, and windows. Those items were chosen because most children were sufficiently familiar with them to be able to locate them on the machinery. I handed each child a picture of the equipment, and they made marks for the number of items they saw. This activity was met with great enthusiasm by the children. The tally sheet below is one they used during our visit to the Danner farm.

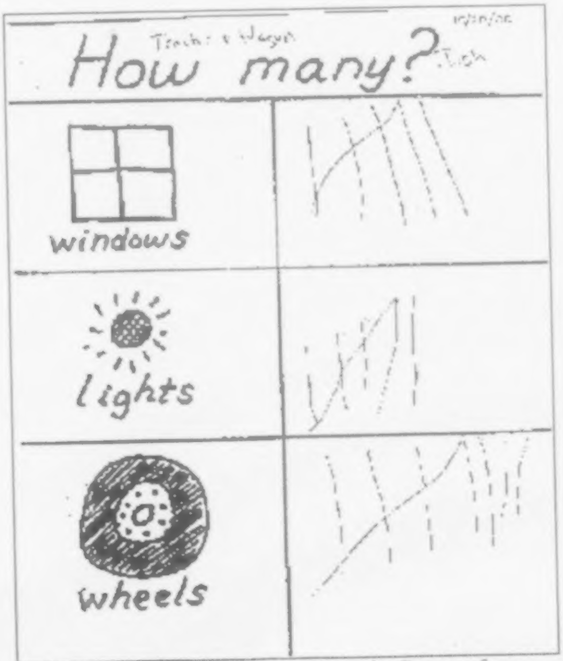


Figure 2. Josh's tally sheet from the Danner farm.

Before the visit, I called Mr. Danner and read the children's questions to him over the phone. During the phone call, such details were discussed as where the children were going to stand and what he could demonstrate. It was decided that following the demonstration of the combine actually harvesting soybeans, he would take the children up into the combine a few at a time, while the rest of the small groups took some time for observational drawing.

Investigation: Phase 2

The visit to the Danner farm went very well. Mr. Danner met us at school and led the school bus out to a field he was in the process of harvesting. He knelt down at the children's level and began by pointing out the front of the combine and showing them the soybeans he was harvesting by breaking apart a soybean pod. The children were fascinated by this demonstration and continued to collect soybeans and the pods, which I encouraged them to save for further examination in our science center in the classroom. After briefly answering the children's questions related to grain farming, Mr. Danner began to harvest the soybeans with the combine as we watched. He was very careful to drive straight into the middle of the field so that we could see the harvesting path he was making by its contrast to the tall soybean plants yet to be harvested on either side of the path. The amount of dust produced was incredible! The children ran for cover behind a truck when the combine first took off. But they peeked out to watch the combine as it circled around and began its return to us. A silence fell over the group. At first, I was concerned that the dust had scared them, but soon their excited, high-pitched voices filled the air as they began talking and asking questions. Upon his return, Mr. Danner was immediately bombarded by questions from the children.

Two parent volunteers had accompanied us on the visit to the farm. The bilingual kindergarten aide and the aide for our severely challenged student also joined us on the trip. It was previously arranged for each of the adults to take a group of five to six students. Each adult had a tote bag with a clipboard for each child, a list of the children's questions, pencils, and the tally sheets. The adults chose which piece of farm equipment to take their groups to, and the children were off! One group went to the smaller tractor and wagon, two groups went to a large transport truck with an auger, another began to draw the front of the combine, and one group went up into the combine. The interest and attention spans of the children surprised many of the adults. All of the groups were very engaged, some with the tally sheets and others with making observational drawings. The same parent who videotaped our earlier trip to a farm also videotaped the visit to the Danner farm. Some good examples of the children actively engaged in field study can be seen on the following video.

Video Clip 1

Mr. Danner explains to the children what the combine is used for and how it operates. He shows them soybeans and explains what they're used for. Then he drives the combine across the field as the children watch.

approximately 5 minutes 30 seconds
approximately 20 MB

transcript of video clip 1

Video Clip 2

Mr. Danner stops the combine, then he and the children discuss the combine and the crops. The children take notes and make drawings.

approximately 4 minutes 13 seconds
approximately 14 MB

transcript of video clip 2

To view these video clips, you will need a **RealMedia Player.**
Go to the Real.com Web site and download the free Real Player Basic.

After our visit to the Danner farm, our project really took off. Immediately after watching the combine harvest the soybeans, the children were filled with questions. I noticed a greater amount of detail in their questions after our visit to the Danner farm compared with their questions prior to the visit. Some of their earlier questions about the tractors resurfaced, eventually leading to our visit of a local tractor and combine dealership. The questions below were generated by the children after revisiting their combine trip by watching it on the video.

Farm Questions after Combine Visit

Anahi and Jorge: How do the soybeans and corn grow?
Javier: How do you drive the tractor?
Kathy: When do you plant the corn?
Morgan: How big is the combine?
Josh: Where do combines get their gas?
Daniel: How many knives are there inside (the combine)?
Jessica: How many days to grow a soybean?
McKayla: Where do you make the wheels for the tractor?
Bianca: How many soybeans do they get?
Lolita: How come they get the soybeans?
Irving: How many wheels did the combine have?
Tracy: Where do you buy a tractor? How do the soybeans grow? When do they get big?
Christian: How do they plant the soybeans?
Alexis: Where does the corn come out of (on the combine) after they pick it?
Breanna: When do the balls come off of the soybeans (when they're picking it)?
Kennedi: Where do the combines take the corn?

Materials for their investigation continued to be provided in the classroom. Communication was also continued through letters with Mr. Danner about some of the children's questions. The Iowa Soybean Promotion Board was contacted, and they sent more information and materials about soybeans. Many of the children's questions continued to be about the combine itself: how it worked, how many wheels it had, and so forth. This interest prompted the arrangement of another visit for the class, this time to a tractor dealership.

I called a local dealership of Case, an international producer of tractors and combines. H.D. Cline was the name of the dealership located in West Liberty and owned by the Cline family. The owners seemed a little hesitant at first about the visit but in the end decided to let us come. I made a personal visit the day before our field site visit. The kind of work the children would be doing there was discussed with the employees and the management. Two demonstrations were planned for the children to watch: replacing a tractor light bulb and replacing screws in the wheel with an air wrench. Back in their classroom, the children planned teams of who wanted to study which area at H.D. Cline. Four interest groups were formed: one to focus on a study of wheels, another on lights, a steering wheel/computer group, and another to focus on the front of the combine.

The children really enjoyed the visit. The advance planning was very helpful. The employees knew exactly where they wanted the children to sit and conducted the demonstrations in an appropriate length of time for them. The employees also surprised us with an additional demonstration of the removal of a damaged motor from a combine. They even let all the children climb to the top of the combine to see where the motor used to be. At the end of the visit, they provided each of the children with a model tractor to take home and some outlines of combines to color. The outlines of the combines were used for a classroom writing activity described later in this article.

During Phase 2 of the project, there were many ways the children continued investigating combines. The following examples are taken from documentation panels shared with the parents at our culminating event, a night when the families came to school to learn about the children's experiences. One panel focused on the process of project work, explaining it to parents by grouping activities under the following categories: demonstration, investigation, drawing, narration, and questioning.

Demonstration. Demonstrations observed by the children during field site visits are a key part of the Project Approach. Demonstrations give children something tangible to focus on and remember, rather than just giving them information verbally. Morgan, 5 years old, reflects on watching the combine: "The combine was moving and we got dirt on our face and it cut the soybeans when it was moving" (see Video Clip 1). Children watched the combine harvesting soybeans at the Danner farm. They later watched a demonstration by H.D. Cline employees of putting the bolts into a wheel (see Figure 3).

Figure 3. H.D. Cline demonstration.

Investigations. Hands-on investigation was an essential part of the children's learning about the combine. On our visit to the Danner farm, Mr. Danner let the children play in buckets of soybeans, animal-grade corn, and food-grade corn (see Figure 4). At H.D. Cline's, the children were allowed to climb to the top of the combine and see where the soybeans are stored. Breanna reflects on her climb to the top of the combine: "Estoy subiendo con Paquito para mirar las cosas de elote que estaban adentro la cosechadora. Estoy mirando las semillas arriba." ("I'm climbing with Paquito, to watch the things of corn that were inside the combine. I'm watching the seeds on top") (see Figures 5 and 6).

Figure 4. Children playing in the buckets of corn.

Figure 5. Climbing the H.D. Cline combine.

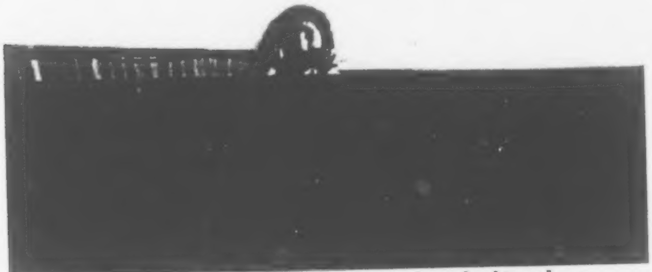


Figure 6. Breanna on top of the combine looking down.

Drawing. Drawing is a child's way of taking notes during a field visit. Just as we write notes to help us remember things, a child's drawing can help him or her remember. Comparing a child's repeated drawings allows us to see what they have learned over time. Payton, age 5, reflects on drawing the front of the combine: "I was drawing the teeth. Morgan was drawing the same thing. The big teeth were for chomping the beans" (see Figure 7). The sketch in Figure 8 was drawn by Javier at the Danner farm on October 12. The sketch in Figure 9 was drawn by Javier in our room on October 20. Javier's final wheel sketch, showing both front and back wheels and the bolts, was drawn at H.D. Cline's on November 1 (see Figure 10).

Figure 7. Payton and Morgan drawing.

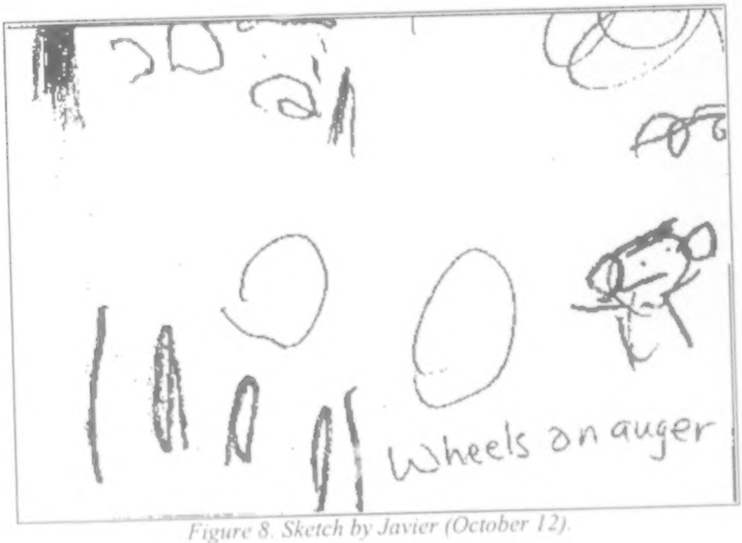
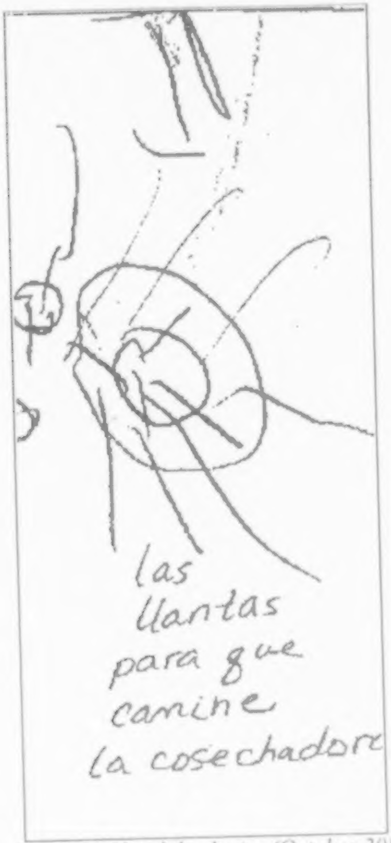

Wheels on auger

Figure 8. Sketch by Javier (October 12).


las
llantas
para que
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la cosechadora

Figure 9. Sketch by Javier (October 20).

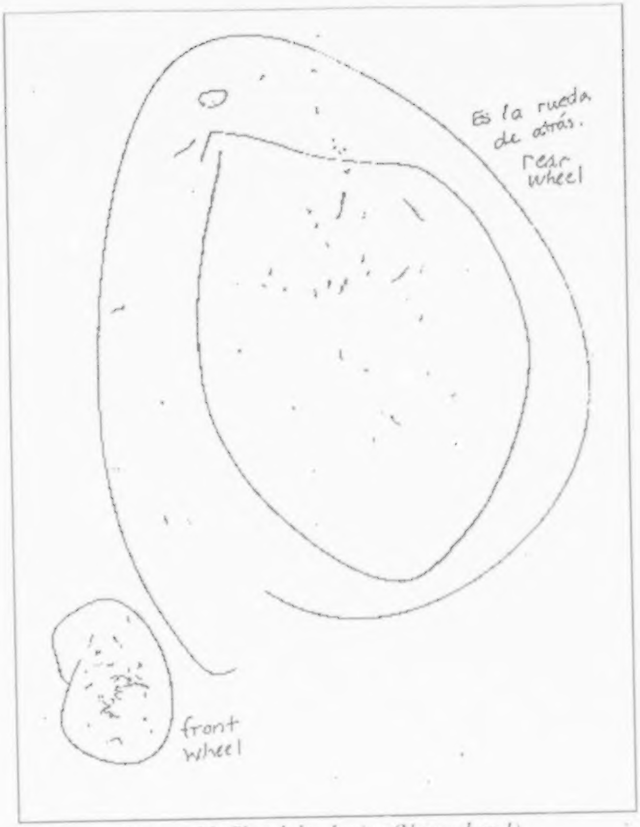


Figure 10. Sketch by Javier (November 1).

Narration. A narration of the events in the Combine Project helped our class remember exactly what they experienced. The narration also helped them to reflect on their own learning. The following was dictated to me by the children on the day after our trip to the Danner farm: "We went to the farm on the bus. We saw 1 tractor and 1 combine. We saw some trucks, and Javier drew the part that gets the corn back there (auger). The combine was green and yellow, 'cause that's what it's supposed to be. The combine was really big. We climbed a ladder to get to the top of the combine."

Questioning. By generating their own questions, children took ownership in their project work on the combine. Throughout the project, our class was constantly asking questions. Mr. Danner took the time to answer the children's questions during our field site visit (see Figure 11). Christian was curious about how many pieces were on the front part of the combine. He counted the corn headers and wrote down the numerals to find the answer (see Figure 12). McKayla's question was, "Where do you make the wheel for a tractor?" She asked this question of an employee from H.D. Cline and remembered it all by herself. I wrote down his answer, "It comes from a store, and we bring them here to put them on tractors." McKayla was very intent upon copying down the answer and drawing it out (see Figure 13).

Figure 11. Mr. Danner answering questions.

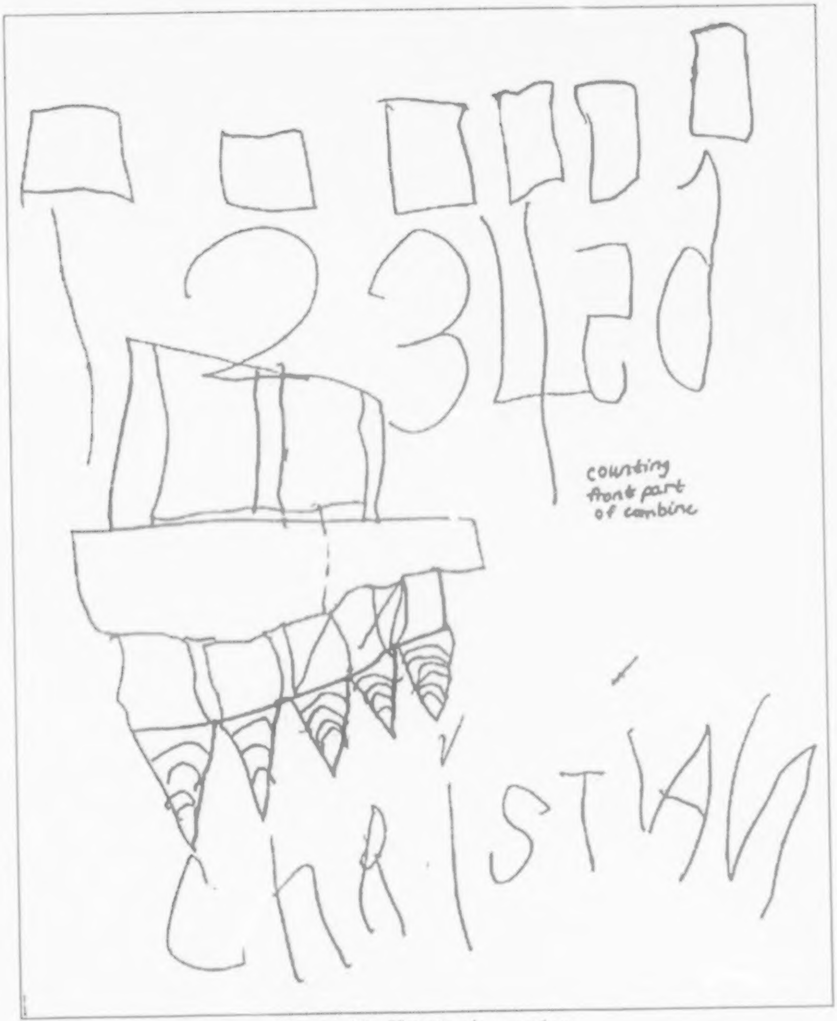

2
3
4
counting front part of combine
CHRISTIAN

Figure 12. Christian's question.

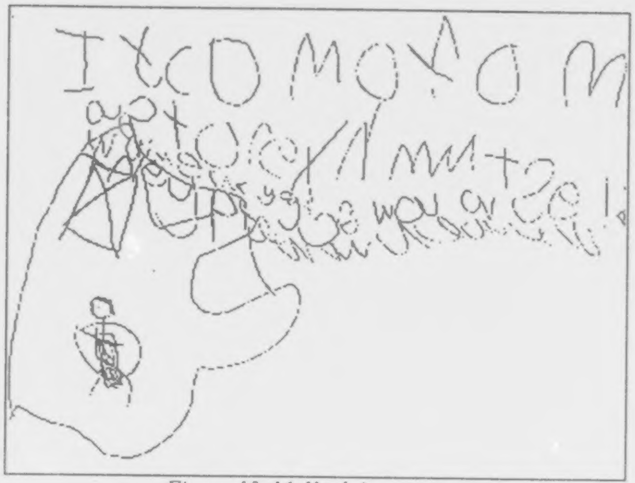


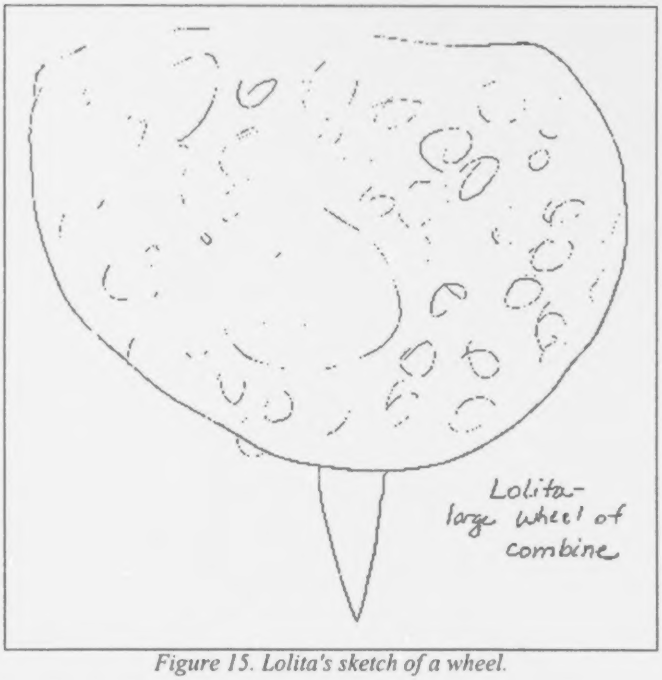
Figure 13. McKayla's question.

Representation

During the weeks in between our two field site visits, investigation continued in our classroom. Before visiting H.D. Cline, the children were very involved in choosing exactly what they were interested in examining. They signed up for different teams to examine various parts of the machinery. For example, we had a wheel team, a lights team, and a steering wheel-computer buttons team. After our field site visit to H.D. Cline, the children were shown some documentation of other projects, and we discussed what they wanted to do with their new knowledge about combines. It was decided that they would build a combine in their classroom. The children made a list of what is needed to make a combine and signed up for various jobs, many based on their teams from our field site visit to H.D. Cline. Almost all of the children in the class signed up for a job; several people signed up to make two different things for the combine. The class planned to begin construction the following Monday; two children remembered all weekend and brought special materials for our combine construction. The following paragraph explaining the construction of a combine wheel is an example of the documentation placed on the combine they built to share with parents for our family night:

Lolita drew the wheels of the combine at a field site visit (see Figures 14 and 15). Back in our room weeks later, Lolita and Lexi constructed wheels after examining drawings and photos (see Figures 16 and 17). The combine was constructed in about a week during center time during the afternoons. After our construction was completed, they only played in the combine for two days. Based on this observation, and the length of our project, I decided it was time to culminate the project.

Figure 14. Lolita sketching.



Lolita-
large wheel of
combine

Figure 15. Lolita's sketch of a wheel.

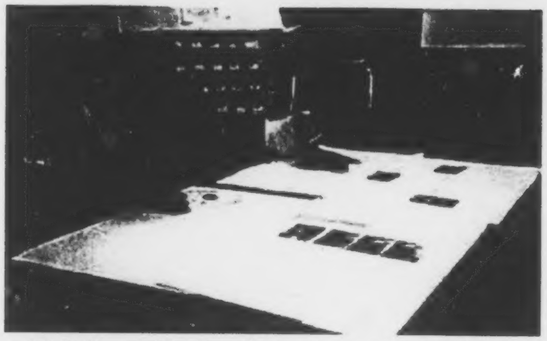
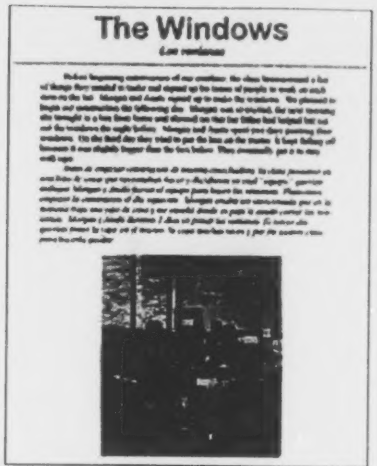


Figure 16. Lolita and Lexi studying photos and sketches of a wheel.

Figure 17. Finished wheel by Lolita and Lexi on the combine.

Culmination: Phase 3

The children gathered together, and I began a discussion of how they could culminate the project. Several possibilities were listed, and they were most excited about showing their parents their work. I spoke with the principal and planned a family night for our class. We marked it on the calendar, and the children counted down the number of days until our "Combine Party," as it came to be known. The family night was a successful way to conclude our project and is explained in greater detail later in this article. Two documentation panels, "How We Learned in the Combine Project" and "Meeting Kindergarten Goals in the Combine Project," were shared at the family night. The combine itself was used as documentation by making tent cards that explained how each part of the combine was made (see Figure 18).



The Windows

Figure 18. Example of a tent card from family night.

The children were very excited about our family night. The documentation panels were completed early and brought into our classroom two days before the event. During center time, the children had a chance to find their contribution to the project on the boards or on the tent cards attached to the combine they had constructed and to practice how they would show it to their families. Twelve families came to our family night, including grandparents, aunts and uncles, and neighbors. This attendance was the best of any home–school event during this school year. Almost half of the participants were Spanish-speaking families. At the family night, evaluations were also provided for the parents to fill out on the Project Approach in our classroom. Shown in Figures 19 through 21 are some photographs of parents looking at the documentation of the Combine Project.

Figure 19. Families looking at a display.

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Figure 20. Kennedi's mom looking at a display.

Figure 21. Lexi showing her mom her wheel part of the combine.

Teacher Reflections

Parental Involvement

Much of the success of this project was due to the support and interest of the parents. Parents were involved in many ways during our Combine Project. I held a Project Approach information night, encouraged parents to volunteer, and held a family night to celebrate the construction of the combine.

I held a Project Approach information night early in the school year, about two weeks after the school year had begun. Ten families came to the meeting, representing about half of my students. For our school, this number is considered an expected turnout for home–school events. For example, nine families came to our schoolwide open house. I was pleased to see that about one-third of the participants were Spanish-speaking parents from our room. I gave a brief overview of how the Project Approach works, how we could meet many of our kindergarten curriculum goals through a project, and how they as parents could support us in our project work. I had the parents write down their professions and hobbies to keep in mind for future projects.

Following the project informational night, I had many parents volunteer to help with the project. Two parents who attended the informational meeting later began volunteering in our classroom on a weekly basis. Both of those parents also decided to come along with us on our field site visit to see the combine working at the Danner farm.

One of those parents said she could videotape our field site work. She videotaped the preliminary field trip that we went on with the other kindergarten classes. That videotape was well done, so I showed her some tips from *Windows on Learning* (a book by Judy Harris Helm, Sallee Beneke, and Kathy Steinheimer published in 1998 by Teachers College Press) about using videos in project work, such as focusing on big pieces of equipment that might seem overwhelming for the child to look at. She did a wonderful job, and we were able to refer back to the video throughout our project work. The video allowed us to revisit our trip to the Danner farm, and the children watched it before generating a new list of questions two days after our field site work. The video also enabled us to do time-two drawings, right in our own classroom, of their observational sketches from our original field site work. The details provided by the video were also helpful for construction of the combine.

Meeting Curriculum Goals

One of my primary concerns throughout the course of the project was addressing our curriculum goals. This concern stemmed partially from the fact that I was given a West Liberty Foundation Grant for using the Project Approach, and I wanted to be careful to demonstrate to the trustees of the grant how effective the Project Approach can be in reaching academic goals in the classroom. Second, I wanted to demonstrate to parents how much their children were actually learning during the project and how well the Project Approach ties in with our standard curriculum.

I began by using the Teacher Planning Web (see Figure 1) to brainstorm a list of possible ways a Farm Project might fit into the curriculum. The initial web, of course, narrowed down as the topic narrowed. I tied the areas from the planning web as much as possible to the lesson plans. I also kept a list of goals from our report card close at hand to use while writing lesson plans. There were so many places where our kindergarten curriculum goals could be met through our Combine Project! For the documentation panels at family night, I selected examples from the domains of literacy, mathematics, and science. I wanted the goals to be clear to viewers, so I listed the goal being met right below the example of the child's work.

One goal we worked on was mathematics: understanding the values of numbers 1-10 (see Figure 2). Another mathematics goal explored was writing numerals 1-20. Javier wanted to represent that there were four screws in the tractor light. He drew four dots and wrote the numerals, 1, 2, 3, 4 (see Figure 22). During the Combine Project, Anahi became interested in the gauges inside of the tractor. She spontaneously copied down several large numbers to represent the 18 gauges (see Figure 23).

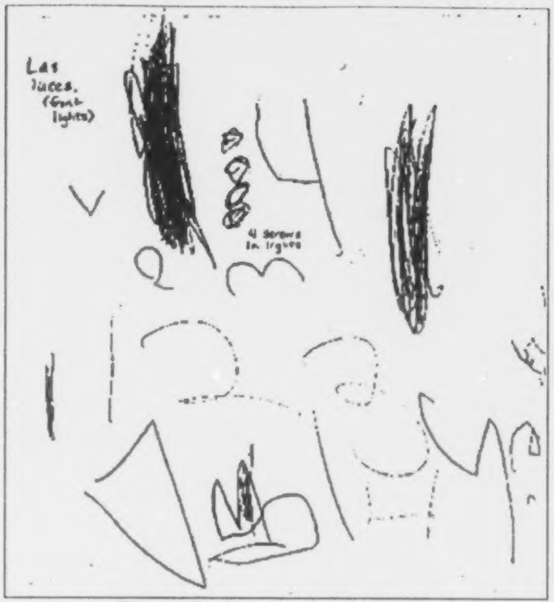


Figure 22. Javier counting lights.

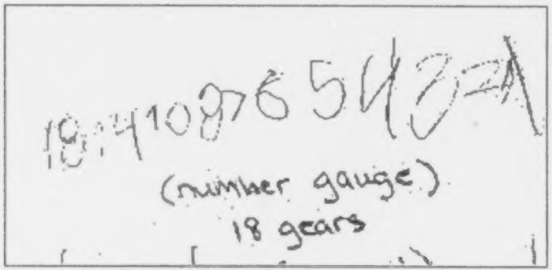
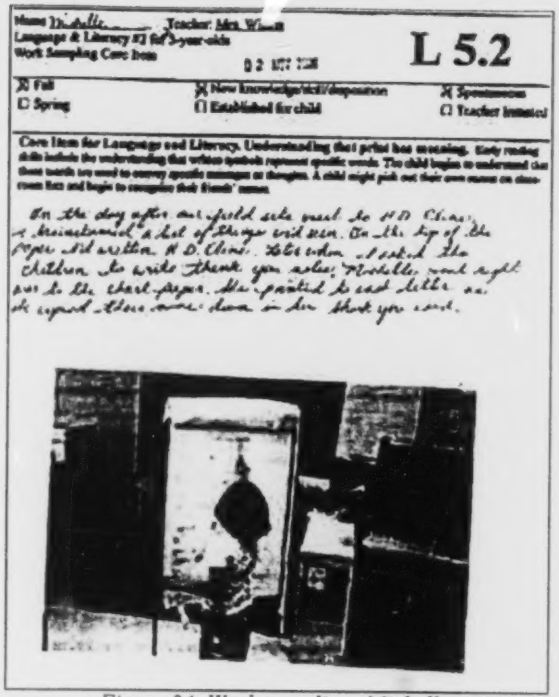


Figure 23. Anahi's tractor gauge.

Many literacy goals were shared with parents as well. One important literacy goal in kindergarten is one-to-one tracking of words when reading. While writing thank-you notes to H.D. Cline, Michelle went to the chart paper and carefully touched each word while writing it. She wanted to be sure to have it just right for the thank-you note (see Figure 24). Another kindergarten literacy goal is using known letter sounds while writing. Using copied pictures of a combine that H.D. Cline had donated, I asked the children if they would be interested in labeling some of the parts of the combine. They practiced saying the words slowly and listening for sounds (see Figures 25 and 26). We also worked with the literacy goal of understanding that print has meaning. After a field site visit, I shared the pictures with our class, and they told me what was happening in each picture. Kathy became very interested in what I was writing, so I let her do her own writing about the picture. She wrote, "We were watching," and "There are 8 bolts in the wheel" (see Figures 27 and 28).



Name Michelle Teacher: Mrs. Wi...
Language & Literacy #2 for 3-year-olds
Work Sampling Core Item

02 177 728

L 5.2

☒ Fall ☒ New knowledge/skill/disposition ☒ Spontaneous
☐ Spring ☐ Established for child ☐ Teacher initiated

Core Item for Language and Literacy. Understanding that print has meaning. Early reading skills include the understanding that written symbols represent specific words. The child begins to understand that these words are used to convey specific messages or thoughts. A child might pick out their own names on classroom lists and begin to recognize their friends' names.

On the day after our field site visit to H.D. Cline, we brainstormed a list of things we'd seen. On the top of the paper I'd written H.D. Cline. Later when I asked the children to write thank you notes, Michelle went right over to the chart paper. She pointed to each letter as she copied those names down in her thank you card.

Figure 24. Work sampling: Michelle.

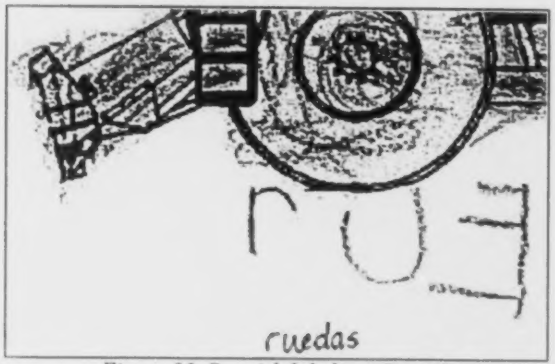


Figure 25. Spanish labeling: Daniel.

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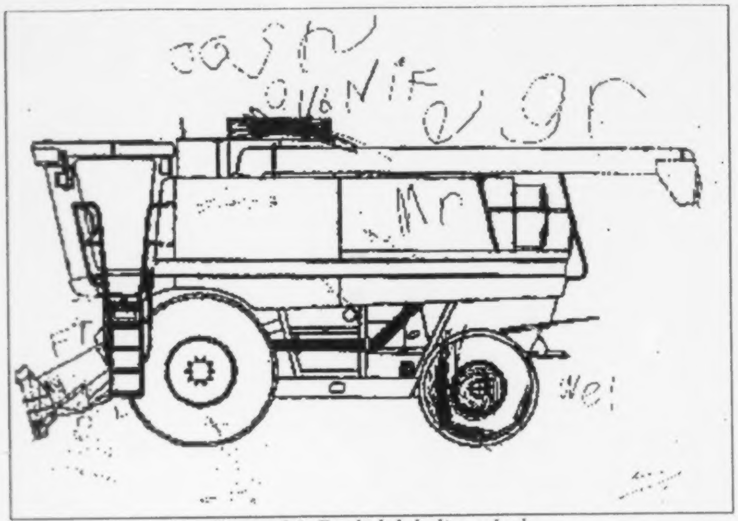

Josh
ei gr
Mr
Fr
wel

Figure 26. English labeling: Josh.

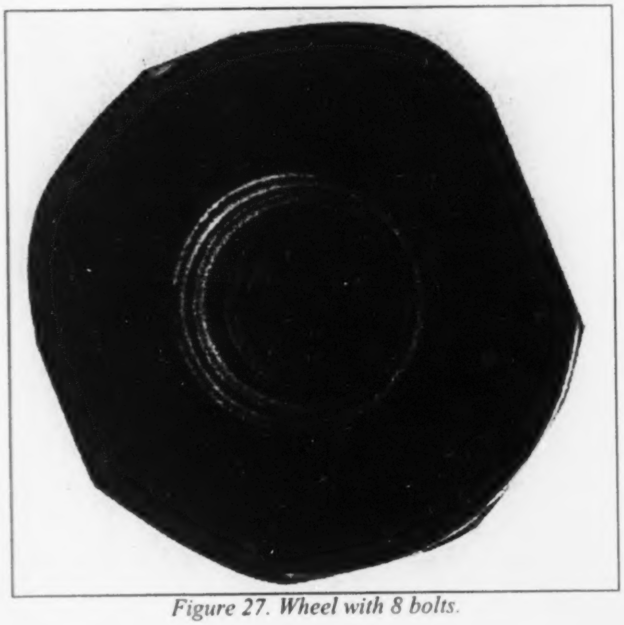
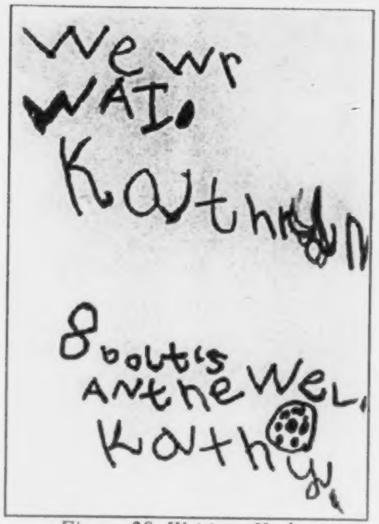


Figure 27. Wheel with 8 bolts.



We wr
WAI.
Kathryn

8 bolt's
Anthe WeL.
Kathy.

Figure 28. Writing: Kathy.

Involving Children with Special Needs

One of the most rewarding aspects of using the Project Approach in my classroom was the participation of Paquito, a special needs student. Paquito is classified as a child with severe special needs and requires a full-time classroom aide. His verbal skills are about at the level of an older 2-year-old or very young 3-year-old. His receptive language is greater than his expressive language. There are a few words he uses repeatedly to express needs or wants, such as "bathroom" or "teacher." Most often when a question or decision is required of him, he repeats the question back but does not verbalize an answer.

I knew that certain aspects of the project could be beneficial to him, such as our field site visits and the hands-on investigation; yet there were other areas of the project work and his involvement that concerned me, such as the questioning or child-led decisions about the culminating event. Paquito participated fully on our field site visits. He did observational drawing on his own and with assistance could do the tally sheets for various parts of the tractor. He made project dictionaries with our class, in which they copied words from our word wall that they wanted to be able to spell for their project work and drew pictures to go along with the words. When we signed up for what we wanted to study on our visit to the tractor dealership, Paquito was able to point to the drawing I had of the steering wheel. Later, however, when we decided to sign up for teams for the construction of our combine, Paquito did not choose to be on any team.

During center time in our room, children who had signed up to construct a piece of our combine went to our dramatic play area to begin construction. Other children whose team was not yet needed, or who chose to go to other centers, simply told me where they would play for that particular day. When it was his turn to choose what to do, Paquito chose to go to the combine. I hesitated because I was worried that he might not know what to do and because I was worried about the other children's reaction to his presence during construction. I decided that it was unfair not to send him, so I let him to go to combine area. I was so pleased to watch Josh, another child in our class, take Paquito

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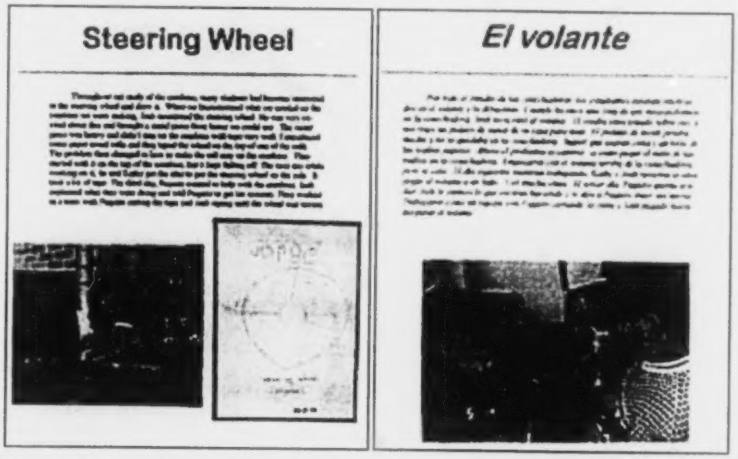
under his wing. Josh was attempting to tape his steering wheel onto the side of the combine. Josh told Paquito to go and get his scissors and showed him how to cut the tape where he needed it cut. Josh and Paquito worked together for about 20 minutes, cutting the tape to attach the steering wheel. Not only was Paquito able to participate in construction, he helped construct the very part which had interested him during our visit to the tractor dealership! I further explained this story to parents on tent cards displayed with our combine for family night (see Figure 29).



Steering Wheel

El volante

Figure 29. Sign from combine about Paquito and Josh on the steering wheel.

Teacher Evaluation of the Project

Through our Combine Project, I learned many things about the process of doing a project. The topic of combines and farm machinery was an appropriate topic, both meaningful and relevant to the children's lives. It certainly reflected the background of my students in rural Iowa. Four children in my class came from farming families. The topic also was successful because it occurred during the harvest season. Children could observe farm machinery working all around them. Furthermore, the topic worked well because there is a lot for the children to both draw and examine on combines. It was a concrete topic for them.

The children gained much of the content knowledge and skills that I had hoped they would gain. Both the mathematics and literacy goals integrated easily with our project work. The only area where I wished I could have done more was with the actual products that come from soybeans or corn in Iowa. We got soybean crayons from the soybean promotion board, but I would have liked to bring in some other products (such as oil) for them to see. Bringing in products could have helped the children complete the harvest process in their minds by seeing the end result. Bringing in additional soybean or corn products would have also enabled me to tie in more social studies and science goals. At the beginning of the project, I prioritized the integration of literacy and mathematics curriculum goals. Despite the fact that I could have included more goals in other disciplines, overall I was pleased to note how many curriculum goals I was able to include.

I am also pleased with how well the Project Approach fit into the special considerations

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of a dual-language classroom. The hands-on experiences provided a rich background for vocabulary development of second-language learners. Motivation was high in both Spanish and English speakers to understand what I was reading in their second language when it related to our Combine Project. I also noticed an increased level of communication between the Spanish-speaking and English-speaking children. This communication level was especially high during the construction of our combine. One young English speaker, for example, wanted to be sure that his Spanish-speaking companion knew what to do, so he said, "Go get your *tijeras* (scissors)." When children planned to ask questions of an expert in their second language, they worked diligently to pronounce the words carefully to be sure they were understood. Furthermore, I noticed parents of different language backgrounds communicating more about their children's work at our family night than at previous home–school events.

During the Combine Project, I also had the opportunity to acquire new knowledge about the individual phases of the project. I learned that in Phase 1, when trying to web the children's prior knowledge, they often generate questions; I could have written down their questions on a different sheet of paper while we were webbing instead of waiting to record their questions until later. In Phase 2, I experienced the benefits of going to visit a field site before taking the class. I think our field site visit went smoothly due to my preliminary visit and resulted in a richer experience for the children. In Phase 3, I incorporated the children more in planning events than I had in previous project work. I noticed that as a result, the children were more excited about the family night, and that excitement contributed to a large number of families attending.

In Conclusion

The Combine Project provoked a lot of thought for both my children and me. I began to feel that something exceptional might be occurring in my classroom after a conversation I participated in over lunch. A few of my colleagues were complaining about their children being excited about the upcoming Thanksgiving vacation. I commented that my students did not seem very wound up about the holiday this year. Another teacher, whose grandchild is in my classroom, commented, "I'll tell you what your kids are wound up about—it's that Combine Project of yours!" What a great thing it is to be wound up about learning and investigating in kindergarten!

Author Information

Rebecca A. Wilson teaches kindergarten in the Dual Language Program at West Elementary in West Liberty, Iowa. The program focuses on maintaining native language development, while learning a second language, and serves children from kindergarten to fourth grade. Rebecca has a B.A. double degree in early childhood education and Spanish from the University of Northern Iowa. She continues to learn about the Project Approach and apply it to her classroom teaching.

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For more information about the Project Approach, please visit
http://ericeece.org/project.html

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Transcript of Video Clip 1

MR. DANNER: And this is some of the equipment that we use to do it. And this is one of the farms that we do it on. We've got many farms around in the area. This is the truck that we use to haul the grain away to take it to a bin.

TEACHER: … ponen el grano despues de recojerlo y lo ponen alli para llevarando en esta carte en este combino grande.
(… they put the grain after harvesting it and they put it there for carrying it in this bin in this big combine.)

MR. DANNER: We raise different kinds of grain. We raise soybeans.. . . We raise corn. It takes it in through here. This goes to the ground. It lowers and it's got a whole bunch of knives out in front here that cuts it off. And this thing helps push it in. It pushes it in the machine. And gathers it all to the center and pushes it through. Then the combine smashes the plant and rolls it. And inside these—we call these pods. Inside there's beans in there. . . . The machine separates it. We've got a whole bunch of them.

TEACHER: Can you pass it? Pass it to another person.

CHILD: There's a whole bunch of them.

TEACHER: Go up and see if you can get some of the beans. . . . It's OK. There's some in there.

TEACHER: What is in your hand? Can you tell …?

CHILD: Soybeans.

TEACHER: What do they grow in? A bean pod?

CHILD: Yeah.

TEACHER: Let's come sit back down. Now that you've got your beans, sit back down, so we can …

CHILD: I've only got one of them.

TEACHER: That's OK.

TEACHER: We're going to sit back down and see what else …

CHILD: I want my beans back.

MR. DANNER: This is feed for next year.

TEACHER: OK, he was right that they use some of them for planting.

TEACHER: What do you think they use these for?

MR. DANNER: Some of them … you'll find that when you go to the grocery store, like vegetable oil. The beans, when they process them, they get oil, vegetable oil out of them. So a lot of your vegetable oils come from soybeans. It's used for proteins for animals.

TEACHER: Do animals eat it?

MR. DANNER: Yes.

TEACHER: So sometimes animals eat it. A veces los animales lo comen. A veces hacen cosas como aceite. Hacen aceite.
(Sometimes animals eat it. Sometimes they make things like oil. They make oil.)

MR. DANNER: Some of these are for human consumption. For soy milk or soy burgers. Some beans are used for … they're using soybeans to make diesel fuel now. And certain oils. There's many, many uses for soybeans. I don't even know them all.

[The combine goes across the field. The children follow.]

CHILD: The dust is in our eyes already.

TEACHER: That's OK.

[The combine comes to a stop, and Mr. Danner climbs down.]

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Transcript of Video Clip 2

[Mr. Danner gets down from the tractor after driving it across the field.]

TEACHER: That was cool, wasn't it? Did you see it move? Did you see the teeth move?

[The children talk. Mr. Danner explains the operation of the combine. The children gather around buckets of corn.]

TEACHER: Take a big step back so we can explain what it is. Big step back.

TEACHER: Eso es que se llama maiz blanco.
(That's what's called white corn.)
That's what you just looked for?

MR. DANNER: That's what was in those pods. And that's yellow corn for livestock.

TEACHER: Eso no se come la gente. No se come la gente. Se comen los animales esto.
(People don't eat that. People don't eat it. Animals eat that.)

CHILD: I want to eat this.

TEACHER: We're not going to eat it. We're just feeling it right now.

TEACHER: Ya contaron todas las ruedas? Que mas van a contar?
(Did you count all the wheels? What else are you going to count?)

CHILD: Las luces.
(The lights.)

TEACHER: … contar la luz despues?
(…counting the lights after?)

MR. DANNER: You guys want to look inside?

[The children count the parts of the combine: wheels, headlights, etc.]

CHILD: Una …
One, two…
I made eight of them.

TEACHER: Muy bien. Donde estás? (Very good. Where are you?) Oh, there you are. Y las luces? (And the lights?)

CHILD: Now do we get to count the lights?

[Children take notes and make drawings.]

Que ???? adentro?

MR. DANNER: These lights going out to the side show you where your last mark has been when you're doing spring work out in the field. That's the benefit of them. Then there's the light at the end of the auger up there that helps you when you're unloading into the trucks.

TEACHER: There's the lights flashing.

MR. DANNER: It lights up and lets you know how full the truck is.

OTHER FARMER: Did he explain how you drive along side and pick up the beans?

MR. DANNER: No, not really.

TEACHER: Do you know what this tractor is for?

CHILD: Yeah.

TEACHER: What?

[Child answers.]

TEACHER: That's right, in the back wagon, right?

OTHER FARMER: The combine doesn't have to stop moving. This cart can pull along side while the combine is going through the field, and the combine dumps his load onto this cart here. And then this'll take it to the truck.

TEACHER: Did you know that? That's how they did it? You want to get down so somebody else can get up?

CHILD: I found all of them.

OTHER FARMER: Show them where the horn's at. They can each honk the horn.

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El proyecto de la cosechadora: una experiencia en una clase bilingüe

Rebecca Wilson
West Elementary School, West Liberty, Iowa

Abstracto

Este artículo describe lo que ocurrió cuando una clase bilingüe del kindergarten en West Liberty, Iowa, investigaba una cosechadora. El programa de dos idiomas apoya la instrucción académica en español e inglés. La primera parte del artículo narra la historia del proyecto de la cosechadora, el primer trabajo de esta clase en el método llamado proyecto. La historia empieza con una excursión típica del kindergarten a una granja y acaba con una junta en la noche para mostrar a los padres la cosechadora construida por la clase. La segunda parte del artículo discute las reflexiones de la maestra en su aprendizaje de ser guía de proyectos. Las reflexiones de la maestra incluyen la relación de los objetivos del kindergarten a los proyectos, como los proyectos apoyan a los estudiantes de segunda idioma, la participación de los padres, y la inclusión de los niños con necesidades especiales..

Información sobre la escuela

Los estudiantes envueltos en el proyecto de la cosechadora estaban en una clase bilingüe del kindergarten en West Liberty, Iowa. La clase del kindergarten se reúne cada día, seis horas y media. El día se divide en incrementos de una hora y media, aparte del almuerzo o el recreo, en los cuales el idioma del salón de clase es el español o el inglés. (Por ejemplo, lunes, la clase empieza en español, cambia a inglés justo antes del almuerzo, y acaba en español al final del día. Al día siguiente, se repite el patrón, pero la clase empieza en inglés.)

La población de la clase consiste en 11 estudiantes que hablan y son nativos del idioma inglés y 10 hispanohablantes. El objetivo del programa bilingüe es mantener el desarrollo del idioma nativo al mismo tiempo que aprenden un segundo idioma. Hay niños integrados en la clase que tienen objetivos IEP (Plan de la Educación Individual). Uno tiene un retraso severo del lenguaje, el cual requiere un ayudante de tiempo completo, y otro que tiene el síndrome de Asperger. Todos los niños poder participar y contribuir en el trabajo del proyecto de la cosechadora.

El método llamado proyecto fue usado por primera vez en esta clase el año pasado. Este año escolar, 2000-2001, se empezó con una junta de información para los padres sobre el método llamado proyecto. Esta junta ocurrió 3 semanas después de empezar el año escolar. Los padres recibieron información sobre el método llamado proyecto y como relaciona a las normas escolares. Después de la presentación, los padres tuvieron la oportunidad de ver una exhibición de los proyectos que habían sido hechos del año anterior por la clase del kindergarten.

El proyecto de la cosechadora

Antecedentes del proyecto: Fase I

Nuestro proyecto empezó con una excursión a una granja en el otoño, la cual todas las clases del kindergarten toman en nuestro distrito escolar. Durante una discusión con todo los estudiantes, hicimos una telaraña de papel de cartulina grande, indicando sus pensamientos sobre la granja y de lo que imaginaban que iban a ver durante nuestra visita. Después de su visita a la granja, usé otro color de marcador para escribir sus nuevas contribuciones en la telaraña. Mucho de los comentarios de los niños tenían que ver con los animales que habían visto en la granja. Sin embargo, un niño pensó en un tractor como una idea adicional para incluir en nuestra telaraña, y otro niño pensó en un elote. Los comentarios que compartían rápidamente empezaron cambiar a ser preguntas sobre los tractores y como crece el elote. En este momento, decidí seguir su nuevo interés en el cultivo de granos, en vez de los animales, y organicé una visita a la granja de Billie Danner para ver la cosecha de las semillas de soja por una cosechadora. (Sr. Danner es el padre de uno de los niños en mi clase. Después de la junta informativa sobre el método llamado proyecto, me dio la bienvenida al visitar su granja con nuestra clase.) Abajo se encuentra la telaraña de la planificación de la maestra inicial. Sin embargo, el enfoque principal del proyecto cambió a ser la maquinaria de la granja.

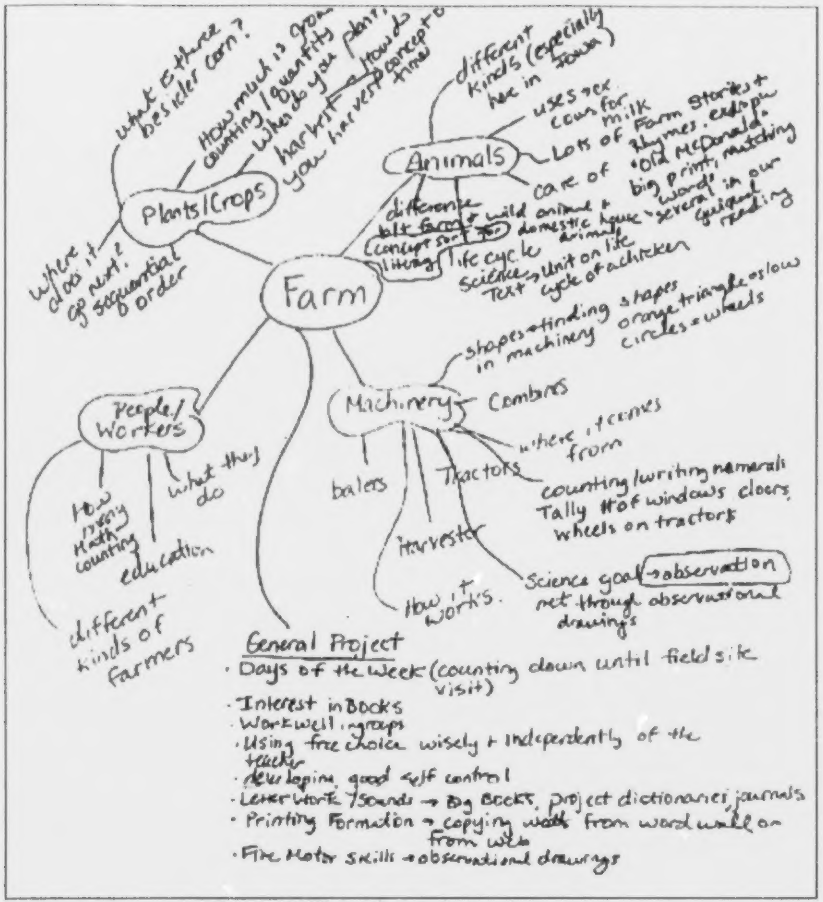
Farm
Plants/Crops
what else is there besides corn?
How much is grown counting/quantity
When do you plant, harvest
How do you harvest
concept of time
where it goes next? sequential order
Animals
different kinds (especially here in Iowa)
uses for cows milk
Lots of Farm stories + Rhymes. ex. Old McDonald. big print, matching words in our several guided reading
care of
difference b/t farm & wild animal + domestic house animals
concept sort
literacy
life cycle
science Text
Unit on life cycle of a chicken
shapes finding shapes in machinery
orange triangle slow circles wheels
Machinery
Combines
where it comes from
counting/writing numerals Tally # of windows doors, wheels on tractors
balers
Tractors
Harvester
How it works.
Science goal observation met through observational drawings
People/Workers
How many Math counting
education
what they do
different kinds of farmers
General Project
· Days of the Week (counting down until field site visit)
· Interest in Books
· Work well in groups
· Using free choice wisely + independently of the teacher
· developing good self control
· Letter Work / Sounds → Big Books, project dictionaries, journals
· Printing Formation → copying words from word wall or from web
· Fine Motor skills → observational drawings

Figura 1. El cuadro sinóptico de maestra.

Antes de ir a la granja de la familia Danner, los niños hicieron muchas preguntas sobre lo que esperaban a ver durante su visita. Para ayudarles a recordar la visita inicial a una granja, vieron otra vez el video que había grabado una madre de un estudiante de la clase. El video fue una herramienta muy útil para empezar la discusión.

Los niños generaron las siguientes preguntas después de su visita a la granja que tomaron con todas las clases del kindergarten. Ese fue antes de cualquier visita al sitio del proyecto. Para ayudarles a pensar que seria apropiado preguntarle al Sr. Danner en nuestra visita del sitio, separé las preguntas por los que tenían que ver con Ganado, y las que tenían que ver con el cultivo de granos. Muchas de las preguntas sobre el comportamiento de los animales y sus nacimientos fueron contestadas antes de visitar la granja de Sr. Danner, a través de libros informativos. El Sr. Danner contestó las preguntas acerca de que comen los animales, las cuales fueron de gran interés para los niños, también cuando les enseño cubos de elote del grado alimentario y les explicó cuales animales lo comen.

Preguntas sobre el ganado (Son en las palabras exactas de los niños.)

McKayla/Jorge: ¿Porqué comen elote los cochinos?
Jessica: ¿Porqué los caballos galopan? ¿Qué comen los caballos?

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Irving: ¿Qué comen las vacas?
Kathy: ¿Cuánto elote comen los animales?
Payton: ¿Cómo los gatos agarran los bebes?
Morgan: ¿Porqué los cochinos dan vueltas en el lodo?
Lolita: ¿De qué comen las ovejas?
Breanna: ¿Si las vacas comen la misma cosa de perros?
Daniel: ¿Porqué comen las vacas leche?
Michelle/Josh: ¿Qué dan de comer las gallinas más de hierba?
Ariel: ¿Qué comen caballos?
Alexis: ¿Cuál sonido hacen los chivos?

Preguntas que podemos preguntar al Sr. Danner (cultivo de grano)

Bianca: ¿Cuánta familia tiene el granjero?
Anahi: ¿Cuántas llantas tienen los tractores?
Christian: ¿Qué tan alto crece el maíz?
Kennedi: ¿Cómo manejas un tractor?
Joel: ¿Cómo sale el elote cuando sale? (cuando está listo para comer)
Tracy: ¿Cuánto cuesta el tractor?

En preparación para la visita a la granja de la familia Danner, un papel de tarja, fue introducido a los niños durante una lección de matemáticas. Di fotos de los tractores y cosechadoras de John Deere, ambos con papeles de tarja con partes de la maquinaria que eran posibles de contar. Los papeles de tarja incluidos dibujos y las palabras escritas para: ruedas, luces, y ventanas. Estas partes fueron seleccionadas porque son lo suficientemente familiares para la mayoría de los niños para que puedan encontrarlos en la maquinaria. Distribuí una foto de la maquinaria e hicieron tarjas para el número de las partes que vieron. La actividad tuvo éxito con los niños y estaban muy entusiásticos al cumplirlo. El papel de tarja encontrado abajo es uno que usaron durante la visita a la granja de la familia Danner.

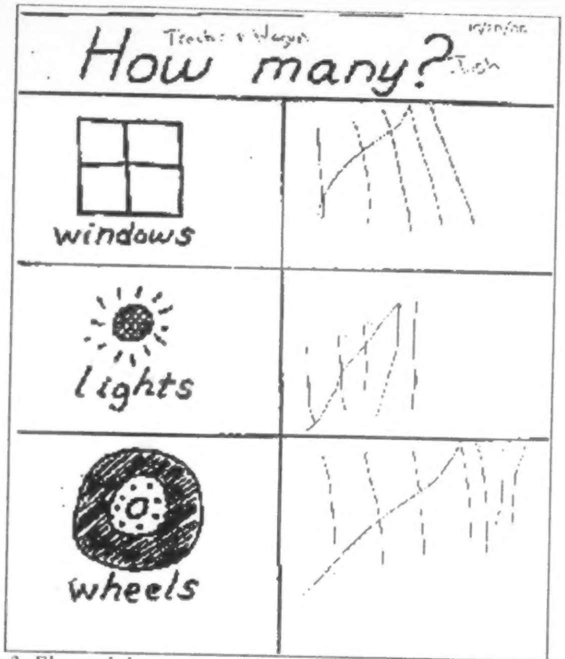

Figura 2. El papel de tarja por Josh de la granja de la familia Danner.

Antes de la visita, hablé con el Sr. Danner por teléfono y le leí las preguntas de los niños. Durante la llamada, discutimos sobre las detalles por ejemplo: donde iban a estar trabajando los niños y lo que él nos podría demostrar. Decidimos que enseguida de la demostración de la cosecha de las semillas de sojas, el subiría unos niños, grupo por grupo, arriba en su cosechadora, mientras los otros grupos tomarían tiempo para los dibujos de observación.

Investigación: Fase II

La visita a la granja de la familia Danner salió muy bien. El Sr. Danner nos encontró en la escuela y dirigió el autobús al campo, el cual estaba en el proceso de cosechar. Se arrodilló, al nivel de los niños, y empezó apuntando el frente de la cosechadora y como eran las semillas de soja para romper la vaina de una. Los niños estaban fascinados por eso y continuaron recogiendo y guardando las semillas y las vainas, que les sugerí examinaran luego en el centro de ciencia de nuestro salón de clase. Después de contestar brevemente las preguntas de los niños relacionados con el cultivo de granos, el Sr. Danner empezó a mover la cosechadora mientras mirábamos. El Sr. Danner tuvo mucho cuidado al manejar derecho hasta en medio del campo, para que vieran el sendero de cosecha que estaba haciendo por el contraste de las plantas altas de semillas de soja en los dos lados del sendero. ¡La cantidad de tierra producido fue increíble! Los niños corrieron a cubrirse detrás de un camión, cuando la cosechadora inició. Pero, luego vieron furtivamente a la cosechadora cuando dio la vuelta y empezó su regreso a nosotros. Un silencio cayó sobre el grupo. Al principio yo estaba preocupada que la tierra los había asustado, pero tan pronto escuché sus voces altas y emocionadas llenaron el aire cuando empezaban hablar y hacer preguntas. Cuando regresó, el Sr. Danner fue bombardeado por preguntas.

Dos padres voluntarios nos acompañaron en la visita de la granja. La ayudante bilingüe del kindergarten, y la ayudante para nuestro estudiante con retrasos severos, también nos acompañaron en el viaje. Anteriormente había organizado que cada adulto fuera responsable de un grupo de 5/6 estudiantes. Cada adulto tenía una bolsa con tableros de dibujo para cada niño, una lista de preguntas, lápices, y los papeles de tarja. Cada adulto escogió una pieza de maquinaria para estudiar con su grupo, y así lo hicieron. Un grupo fue al tractor más pequeño que tenía un vagón, dos grupos fueron al camión de transporte que tenía un auger, otro empezó a dibujar el frente de la cosechadora, y otro se subió en la cosechadora. Su interés y la duración de su atención sorprendieron a muchos de los adultos. Todos los grupos estaban muy ocupados, unos con los papeles de tarja y otros dibujando lo que observaban. La misma mamá quien grabó nuestra visita anterior a una granja, también nos hizo un video de la visita a la granja de la familia Danner. Se encuentran abajo unos ejemplos del video de los niños mientras aprenden activamente en el estudio del campo.

Video Clip 1	Video Clip 2
El Sr. Danner explica a los niños para que se usa y como maneja la cosechadora. Les muestra las semillas de soja y explica para que se usan. Luego maneja la cosechadora mientras la observan los niños. aproximadamente 5 minutos y 30 segundos. approximadamente 20 MB transcripción de video 1	El Sr. Danner para la cosechadora, y discute con los niños la cosechadora y la cosecha. Los niños hacen dibujos y toman notas. approximadamente 4 minutos y 13 segundos approximadamente 14 MB transcripción de video 2

Para ver los videos, se necesita el programa del "RealMedia Player."
Para recibir el programa del "RealMedia Player" (gratis) vayanse al sitio Real.com.

Después de nuestra visita a la granja de la familia Danner, el proyecto siguió adelante. Inmediatamente después de ver la cosechadora cultivando las semillas de soja, los niños estaban llenos de preguntas. Me fijé que sus preguntas tenían mucho más detalle después de visitar la granja del Sr. Danner a comparación de las preguntas anteriores. Unas de sus preguntas anteriores sobre los tractores emergieron de vuelta, eventualmente guiándonos a visitar el comercio local de tractores y cosechadoras. Los niños empezaron esta lista de preguntas después de pensar en nuestro viaje de nuevo por mirar un video.

Preguntas después de visitar la cosechadora (18 de octubre)
(Son las palabras exactas de los niños.)

Anahi and Jorge: ¿Cómo crecieron las semillas de soja?
Javier: ¿Cómo manejas un tractor?
Kathy: ¿Cuándo siembras el elote?
Morgan: ¿Qué tan grande es una cosechadora?

Josh: ¿Dónde reciben gas las cosechadoras?
Daniel: ¿Cuántos cuchillos hay adentro (de una cosechadora)?
Jessica: ¿Cuántos días tarda para crecer una semilla de soja?
McKayla: ¿Dónde hacen las ruedas para un tractor?
Bianca: ¿Cuántas semillas de soja agarran?
Lolita: ¿Porqué agarran las semillas de soja?
Irving: ¿Cuántas ruedas tiene la cosechadora?
Tracy: ¿Dónde compras un tractor? ¿Cómo crecen las semillas de soja? ¿Cuándo se pone grandes?
Christian: ¿Como siembran las semillas de soja?
Alexis: ¿De dónde sale el elote (de la cosechadora) después de recogerlo?
Breanna: ¿Cuándo se salen las bolitas de allí? (de las semillas de soja cuando están reacogiéndolo)
Kennedi: ¿A dónde llevan el elote las cosechadoras?

Seguimos con el estudio de las cosechadoras. Suministré materiales para su investigación en el salón de clase. Comunique también con Sr. Danner sobre una de las preguntas de los niños. Además me comunique con el Consejo de la Promoción de Semillas de Soja en Iowa, y nos enviaron más información y materiales sobre las semillas de soja. Muchas de la preguntas de los niños seguían siendo sobre como funcionaba la cosechadora, cuántas ruedas tenía, etc. Así, organicé otra visita para la clase, esta vez a una agencia de tractores y cosechadoras.

Llamé un comercio local de Case, un productor internacional de los tractores y cosechadoras. H.D. Cline fue el nombre del negocio, situado en West Liberty. Los dueños estuvieron un poco vacilantes sobre la visita al principio de la llamada, sin embargo, al final nos invitaron. Hice una visita personal, un día antes de nuestra visita. Discutieron el tipo de trabajo que harían los niños con los empleados y la gerencia. Dos demostraciones fueron planeados para los niños mirar: reemplazar un foco del tractor y reemplazar tornillos en la rueda con una llave de aire. En nuestro salón, los niños planearon equipos de cual cosa quiere estudiar cada persona. Formaron cuatro grupos de interés: uno para enfocarse en el estudio de las ruedas, otro en las luces, otro en el volante y las computadoras, y otro en el frente de la cosechadora.

Los niños verdaderamente, disfrutaron la visita. La planificación avanzada valió la pena. Los empleados sabían exactamente donde los niños deben sentarse y condujeron las demostraciones en un tiempo apropiado para poder prestar atención. Los empleados también nos sorprendieron con una demostración adicional del removimiento de un motor dañado de una cosechadora. Hasta dejaron a todos los niños subirse arriba de la cosechadora parar ver donde estaban el motor. Al final de nuestra visita suministraron a los niños con un modelo de un tractor para llevarlo a la casa y unos contornos de cosechadora para colorear. Usaron los contornos para una actividad de escritura, descrita luego en este artículo.

Durante la Fase II del proyecto, había muchas maneras en las cuales los niños seguían su investigación de las cosechadoras. Los ejemplos siguientes vienen de los paneles de documentación, compartidos con los padres al evento culminante. El evento culminante es una noche cuando las familias vinieron a la escuela para aprender sobre las experiencias de los niños. Un panel se enfocó en el proceso del trabajo del Proyecto para explicarlo a los padres. Contenía las categorías siguientes: demostración, investigación, dibujo, narración, y hacer preguntas.

La demostración observada por los niños durantes las visitas es una parte integral del método llamado proyecto. Da a los niños algo tangible en el cual que pueden enfocarse y acordarse, en vez de sólo darles información verbalmente. Morgan, 5 años, refleja en la cosechadora, "La cosechadora estaba moviéndose, y tuvimos tierra en las caras, y cortó las semillas de soja cuando estaba moviéndose." Los niños observaron la cosecha de las semillas de sojas en la granja de la familia Danner. Luego, vieron una demostración por los empleados de H.D. Cline poner los pernos en la rueda.

Figura 3. Demostración en H.D. Cline.

Una parte clave del aprendizaje de los niños sobre la cosechadora fue la investigación de la mano. En nuestra visita a la granja el Sr. Danner, les dejó a los niños jugar en cubos de semillas de soja, elote del grado para comer, y elote del grado para los animales. En H.D. Cline los niños tuvieron la oportunidad de subirse la cosechadora y ver donde guardan las semillas de soja. Estas son las palabras exactas de Breanna mientras reflejar sobre su subida de la cosechadora, "Estoy subiendo con Paquito para mirar las cosas del elote que estaban adentro la cosechadora. Estoy mirando las semillas arriba."

Figura 4. Los niños juegan en el elote.

Figura 5. Subirse a la cosechadora en H.D. Cline.

Figura 6. Breanna mirando de arriba de la cosechadora.

Dibujar es la forma de tomar notas para un niño durante una visita del campo. Como los adultos toman notas para ayudarles acordar cosas, el dibujo del niño le ayuda a recordar. En hacer una comparación de los dibujos repetidos por un niño, podemos ver lo que ha aprendido durante el tiempo de estudio. Payton, 5 años muestra dibujando la parte delantera de la cosechadora, "Estaba dibujando los dientes. Morgan estaba dibujando lo mismo. Usaron los dientes grandes que son para moler las semillas."

El dibujo arriba es por Javier, 12 de octubre, en la granja de la familia Danner. Javier hizo este dibujo en nuestro salón de clase el 20 de octubre. El dibujo final de Javier de las ruedas muestra las ruedas delanteras y las traseras con los pernos. Es del 1 de noviembre en la agencia de H.D. Cline.

Figura 7. Payton y Morgan dibujan.

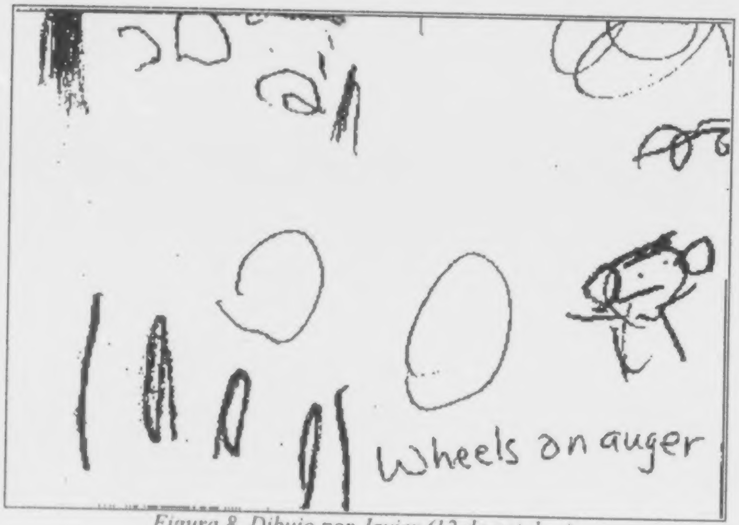

Figura 8. Dibujo por Javier (12 de octubre).

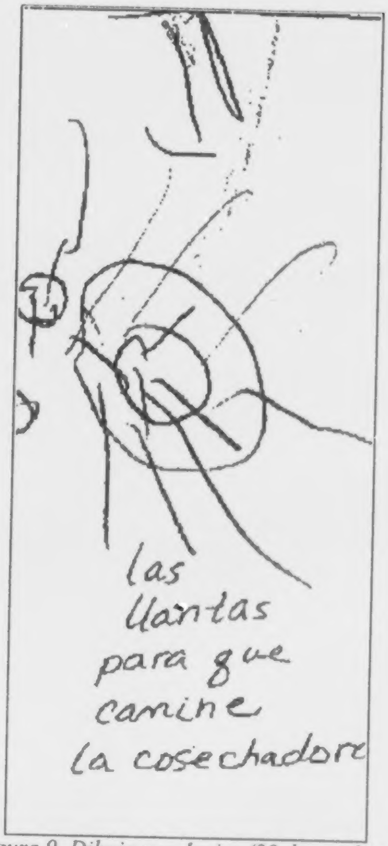
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Figura 9. Dibujo por Javier (20 de octubre).

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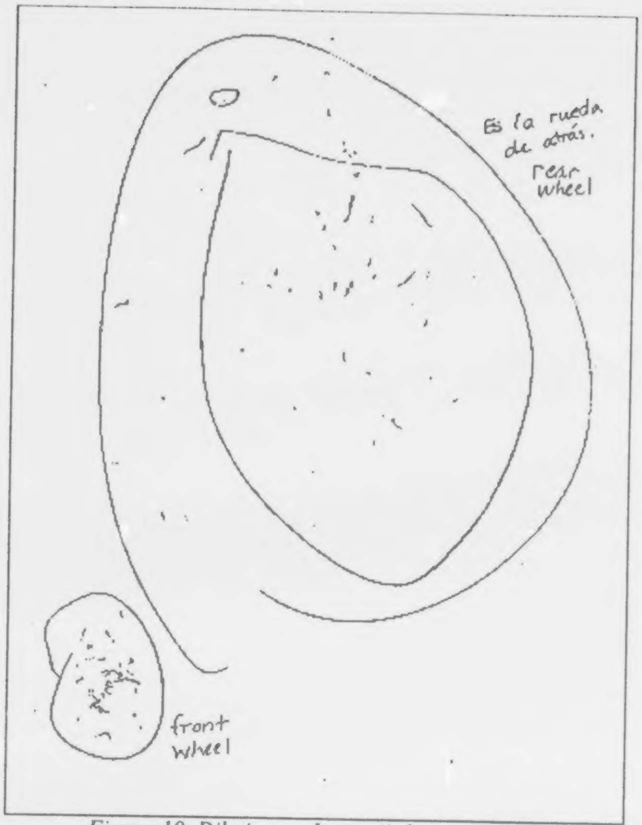
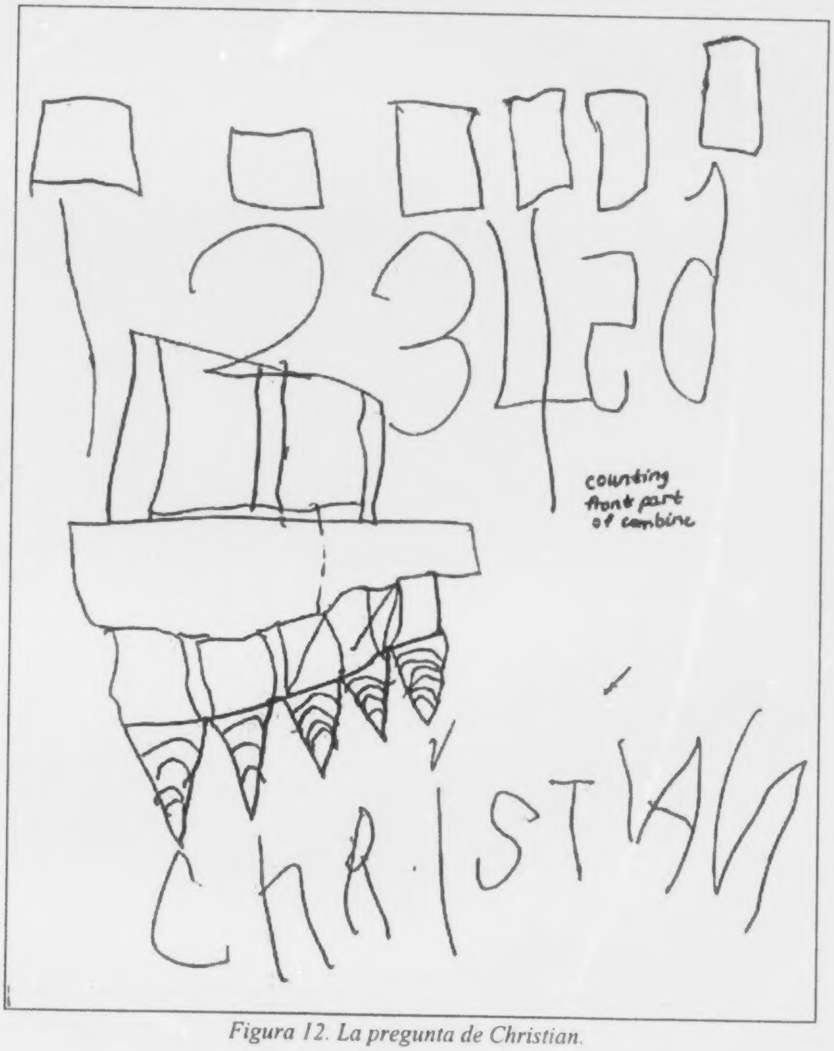


Figura 10. Dibujo por Javier (1 de noviembre).

Una narración de los eventos del proyecto de la cosechadora ayudó a la clase a acordarse de su experiencia. La narración también les ayudó a reflejar su propio aprendizaje. La siguiente narración es de los niños la cual, me dictaron el día después de nuestra visita a la granja de Sr. Danner, "Fuimos a la granja en el autobús. Vimos un tractor y una cosechadora. Vimos unos camiones y Javier dibujó la parte trasera que agarra el elote (auger). La cosechadora era amarilla y verde, porque es el color que debe de ser. La cosechadora era bien grande. Nos subimos en una escalera para llegar arriba de la cosechadora."

Por pensar en sus preguntas individualmente, los niños fueron dueños de su trabajo del proyecto de la cosechadora. En todo el proyecto, los niños hicieron preguntas sin cesar. Sr. Danner tomó mucho tiempo en contestar las preguntas de los niños durante nuestra visita. Christian estaba muy curioso sobre cuantas piezas había en el frente de una cosechadora. El contó las puntas que se usan para recoger elote y escribió las cantidades para encontrar su respuesta. La pregunta de McKayla fue, "¿Dónde hacen las ruedas para un tractor? Ella sola se acordó de su pregunta y le preguntó a un empleo de H.D. Cline. Le escribí su respuesta, "Vienen de una tienda y las traemos aquí para ponerlas en los tractores." MaKayla hizo un gran esfuerzo para copiar la respuesta y dibujarla.

Figura 11. El Sr. Danner contesta las preguntas.



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CHRISTIAN

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Figura 12. La pregunta de Christian.

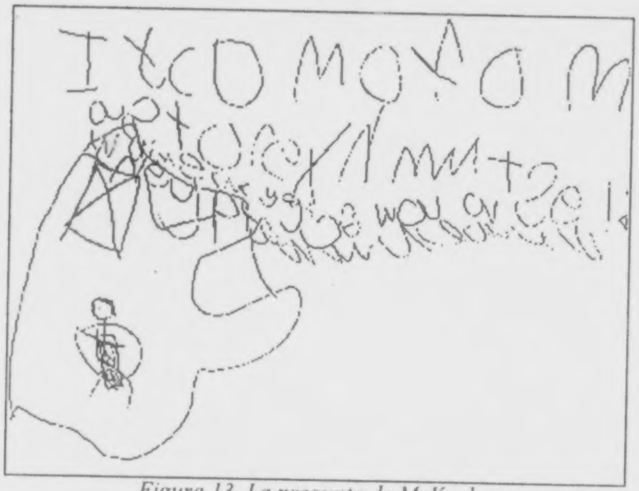

Figura 13. La pregunta de McKayla.

Representación

Durante las semanas entre nuestras dos visitas, seguían investigando en el salón de clase. Antes de visitar a H.D. Cline, los niños estaban muy envueltos en decidir exactamente que querían examinar. Pusieron sus nombres para formar "equipos" diferentes para examinar diferentes partes de la maquinaria. Por ejemplo, tuvieron un "equipo de ruedas," un "equipo de luces," y un"equipo de volante y la computadora / los botones." Después de la visita a H.D. Cline, les enseñe a los niños documentación de otros proyectos, y discutimos como querían ellos compartir su nuevo conocimiento de cosechadoras. La decisión fue que ellos querían construir una cosechadora en su salón de clase. Los niños hicieron una lista de lo que necesitaban para hacer una cosechadora, y escribieron su nombre en la lista debajo de los trabajos varios, muchos escogieron lo mismo "equipo" que hicierion para la visita a H.D. Cline. Casi todos los niños en la clase firmaron para un trabajo; muchas personas decidieron hacer dos cosas diferentes para la cosechadora. La clase planeó por empezar la construcción el lunes siguiente; dos niños se acordaron todo el fin de semana y trajeron materiales especiales para la cosechadora. El párrafo siguiente explica la construcción de la rueda y es un ejemplo de la documentación que posteriormente fue colocada en la cosechadora para compartir con los padres de familia durante la Noche de la Familia.

Lolita dibujó las ruedas de la cosechadora durante una visita. En el salón de clase, dos semanas después, Lolita y Lexi construyeron las ruedas mientras examinanaban los dibujos anteriores y las fotos. Construyeron la cosechadora en una semana durante el tiempo de centros en las tardes. Después de completar la construcción, por dos días sólo jugaron en la cosechadora. Basada en esta observación y la longitud del proyecto, decidí que era tiempo culminar el proyecto.

Figura 14. Lolita dibuja la rueda.

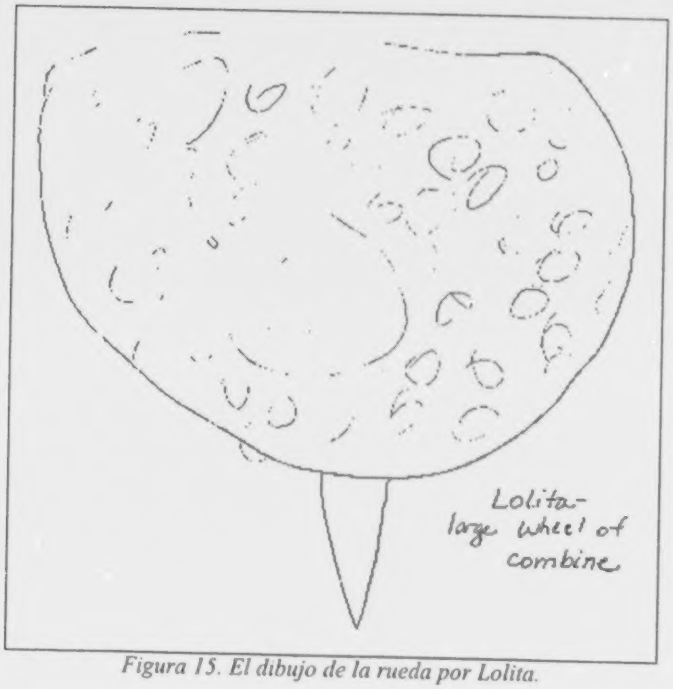
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Figura 15. El dibujo de la rueda por Lolita.

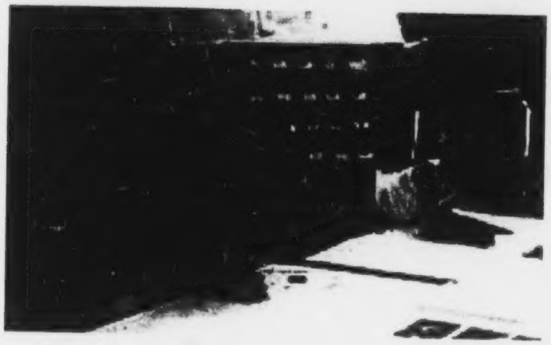

Figura 16. Lolita y Lexi estudian las fotos y dibujos de la rueda.

Figura 17. La rueda para la cosechadora de Lolita y Lexi.

Culminación: Fase III

Los niños se juntaron y empecé una discusión sobre como podrían culminar su proyecto. Hice una lista de muchas posibilidades y ellos estuvieron más emocionados sobre la idea de enseñar a los padres su trabajo. Hablé con la directora y planeamos la Noche de Familia para nuestra clase. La marcamos en el calendario y los niños contaron los días hasta nuestra "Fiesta de la Cosechadora," como empezó a ser llamada. La Noche de Familia fue una buena manera de concluir el proyecto y está explicada en más detalle luego en este artículo. En la Noche de la Familia, compartí dos paneles de documentación, "Como aprendimos en el proyecto de la cosechadora," y "Llegar a los objetivos del kindergarten por el proyecto de la cosechadora." La cosechadora, por si misma, fue usada como documentación por poner tarjetas que explicaban la construcción de cada parte.

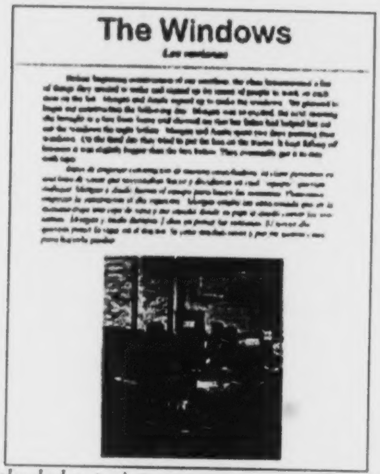

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Figura 18. Ejemplo de las tarjeta para mostrar en la noche de la familia.

Los niños estaban emocionados sobre la Noche de Familia. Acabé de hacer temprano los paneles de documentación y los traje al salón de clase dos días antes del evento. Durante el tiempo de centros, cada niño tuvo la oportunidad de buscar su contribución al proyecto en los dos paneles, o en las tarjetas pegadas a la cosechadora que habían construido. Además practicaron como mostrar su parte a su familia. ¡Doce familias vinieron a la Noche de Familia, incluyendo abuelos, tíos, y hasta los vecinos! Esta asistencia fue la mejor de todos los eventos entre la escuela y la casa durante aquel año escolar. Casi la mitad de los participantes eran familias hispanohablantes. Durante la Noche de la Familia, proveí evaluaciones para los padres, sobre el uso del método llamado proyecto en nuestro salón de clase. Abajo se encuentra unas fotos de los padres viendo a la documentación del proyecto de la cosechadora.

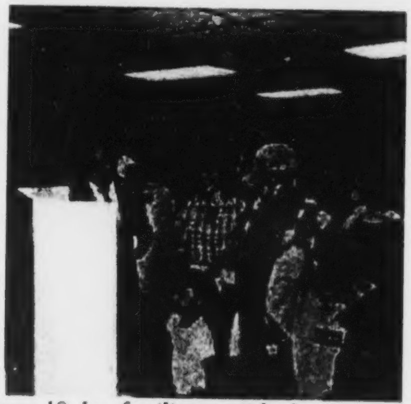

Figura 19. Las familias ven a la documentación.

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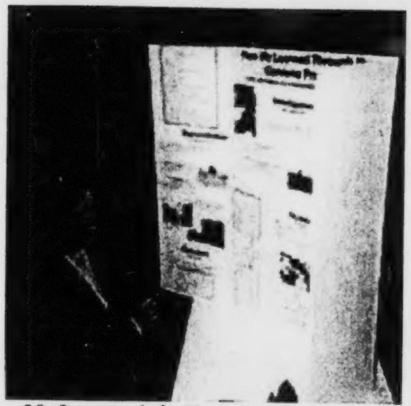


Figura 20. La mamá de Kenndi ve la documentación.

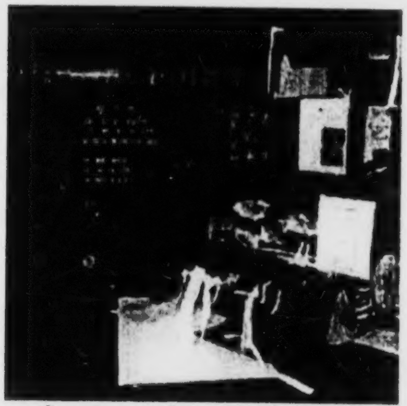


Figura 21. Lexi enseña a su mamá su parte de la rueda de la cosechadora.

Reflexiones por la maestra

Participación de los padres

Mucho del éxito de este proyecto tuvo que ver con el apoyo e interés de los padres. Los padres participaron en muchas maneras durante el proyecto de la cosechadora. Tuve una noche informativa sobre el método llamado proyecto, les animé a ser voluntarios, y tuvimos una Noche de la Familia para celebrar la construcción de la cosechadora.

La noche informativa sobre el método llamado proyecto fue temprano en el año escolar, dos semanas después de empezar clases. Diez familias vinieron a la junta; representaron la mitad de los estudiantes de la clase. Para nuestra escuela, se considera la asistencia normal ser la mitad para eventos entre la casa y la escuela. Por ejemplo, nueve familias vinieron a nuestra "Casa Abierta-Open House" que es por toda la escuela. Estaba contenta de ver que 1/3 de los participantes de la noche informativa fueron hispanohablantes. Les explique muy brevemente el método llamado proyecto, como los estudiantes podrían llegar a muchos de los objetivos del kindergarten por el método, y por último como ellos, los padres, podrían apoyar a sus hijos en el trabajo de proyectos. Pasamos un papel alrededor de la junta en el cual los padres escribieron sus profesiones y pasatiempos, para proyectos posibles en el futuro.

Seguida de la noche informativa, muchos padres querían ser voluntarios con nuestro proyecto. Dos padres de familia, quienes habían asistidos a la junta informativa, empezaron a ser voluntarios en nuestro salón de clase semanalmente. Las dos decidieron ir con nosotros a la visita a la granja de la familia Danner.

Uno de las madres también dijo que podría grabar en video el trabajo de los niños durante la visita. Ella nos grabó en video la primera visita a la granja que hicimos con todas las clases del kindergarten. Hizo un buen trabajo, entonces le enseñé unas paginas de Windows on Learning Ventanas del aprendizaje (Helm, Beneke, Steinheimer, 1998:Bernard) sobre como usar videos en el trabajo de proyectos. Por ejemplo dice: que es mejor enfocarse en una pieza de maquinaria que en verla el niño pueda estar abrumado. La grabación de la visita fue magnífica y nos dio la oportunidad de visitar la granja una y otra vez. Los niños lo vieron antes de generar una lista de nuevas preguntas dos días después de hacer su trabajo del campo. Además el video nos permitió rehacer los dibujos de observación, allí en el salón de clase. El video también ayudó a los niños acordarse de muchos detalles de la cosechadora cuando empezaron su construcción.

Llegar a los objetivos curriculares

Una de mis preocupaciones más grandes, por todo el proyecto, fue la aplicación de los objetivos curriculares. Esta preocupación resultó parcialmente porque había recibido una beca de la Fundación de West Liberty para usar el método llamado proyecto. Quería hacer un esfuerzo para demostrar a los síndicos de la beca como el método llamado proyecto puede ser efectivo para llegar a los objetivos académicos en el salón de clase. Segundo, quería demostrar a los padres que tanto estaban aprendiendo los niños durante el proyecto, y que tan bien el método llamado proyecto conecta bien con nuestro currículo escolar.

Empecé por usar un cuadro sinóptico para los Maestros, para pensar en una lista de posibles maneras de conectar un proyecto de granjas a nuestro currículo. El cuadro sinóptico, por supuesto, cambió como el proyecto cambió. Lo tanto que fue posible, junté las áreas del cuadro sinóptico para los Maestros a mis planes de lecciones. Además, tenía a la mano una copia de los objetivos de nuestra calificación para usar mientras escribir los planes de lecciones. ¡Había bastante lugares en los cuales podría juntas los objetivos curriculares con el proyecto de la cosechadora! Para los paneles de documentación para la Noche de la Familia, elegí por ejemplos de las disciplinas de la literatura, las matemáticas, y la ciencia. Quería clarificar los objetivos para los espectadores, pues incluí el objetivo realizado, directamente debajo del trabajo del niño.

Un objetivo en el que trabajaron fue para matemáticas: entender el valor de los números 1-10. Otro objetivo de matemáticas exploró la escritura de los numerales 1-20. Javier quería representar los cuatro tornillos de la luz del tractor. Dibujó cuatro puntitos y escribió los numerales 1, 2, 3, 4. Durante el proyecto de la cosechadora, Anahi estaba interesada en los calibres adentro del tractor. Ella copió muchos números grandes para representar los 18 calibres.

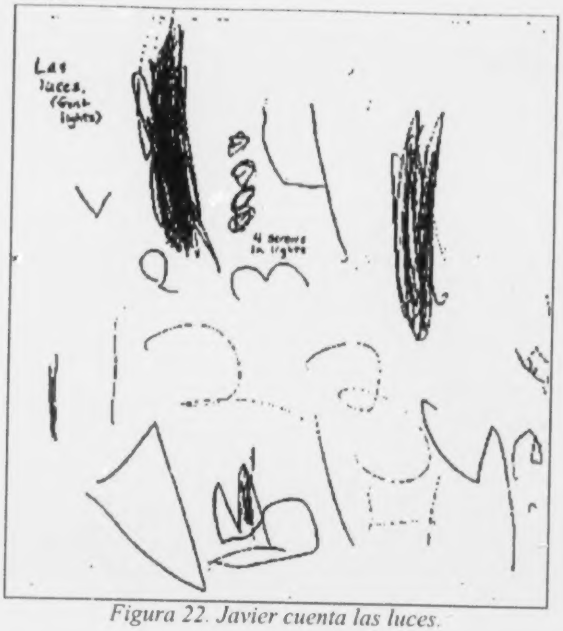


Figura 22. Javier cuenta las luces.

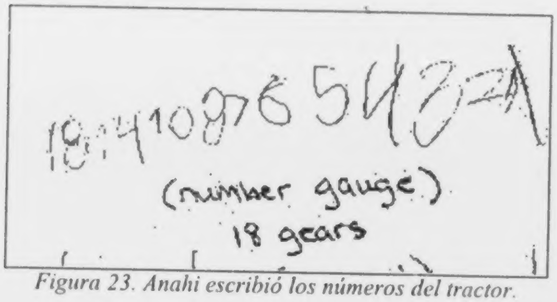
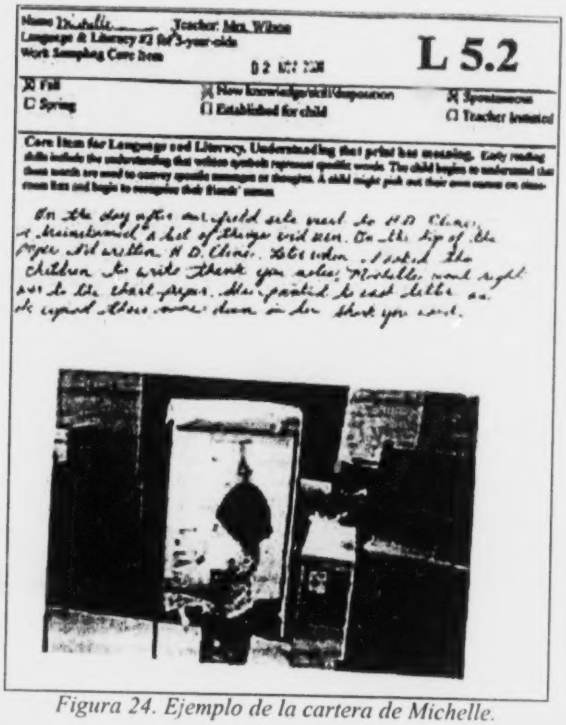


Figura 23. Anahi escribió los números del tractor.

También, compartimos muchos objetivos de la literatura. Un objetivo importante de la literatura en el kindergarten fue separar por palabras mientras leían. Mientras escribían cartas de gracias a los empleos de H.D. Cline, Michelle fue a la lista escrita en una cartulina y con mucho cuidado tocó cada palabra mientras leyo. Ella quería escribirlo perfectamente para su carta de gracias. Otro objetivo de la literatura durante el kindergarten es usar los sonidos de las letras para escribir. Usando los dibujos de una cosechadora que H.D. Cline nos habían dado, pregunté a los niños si les gustarían rotular unas de las partes de la cosechadora. Practicaron las palabras muy lentamente y escucharon a los sonidos. También trabajamos en el objetivo de entender que la escritura tiene significado. Después de hacer las visitas al campo, compartí las fotos con la clase y ellos me dijeron lo que pasaba en cada foto. Kathy tuvo mucho interés en lo que yo estaba escribiendo, pues le dejé hacer su propia escritura sobre el dibujo. Ella escribió, "We were watching," ("Estabamos observando") y "There are 8 bolts in the wheel," ("Hay ocho pernos en la rueda").



Name Michelle Teacher: Mrs. Wilson
Language & Literacy #2 for 3-year-olds
Work Sampling Core Item

02 OCT 2001

L 5.2

☒ Fall
☐ Spring

☒ New knowledge/skill/disposition
☐ Established for child

☒ Spontaneous
☐ Teacher Initiated

Core Item for Language and Literacy. Understanding that print has meaning. Early reading skills include the understanding that written symbols represent specific words. The child begins to understand that these words are used to convey specific messages or thoughts. A child might pick out their own names on classroom lists and begin to recognize their friends' names.

On the day after our field side went to H.D. Cline, I brainstormed a lot of things we'd seen. On the top of the paper I'd written H.D. Cline. Later when I asked the children to write thank you notes, Michelle went right over to the chart paper. She pointed to each letter as she copied those names down in her thank you card.

Figura 24. Ejemplo de la cartera de Michelle.

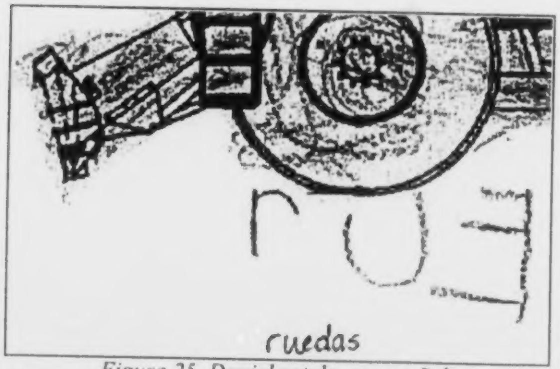


Figura 25. Daniel rotula en español.

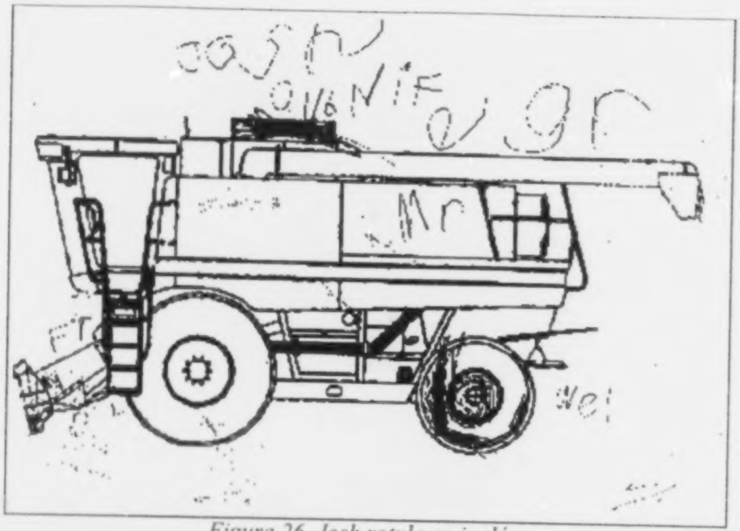

Josh
avaNiF
eigr
Mr
Fr
Wel

Figura 26. Josh rotula en inglés.

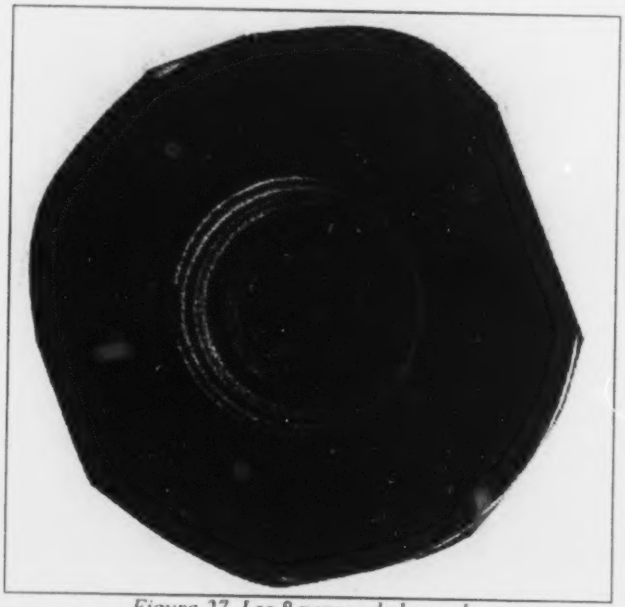


Figura 27. Los 8 pernos de la rueda.

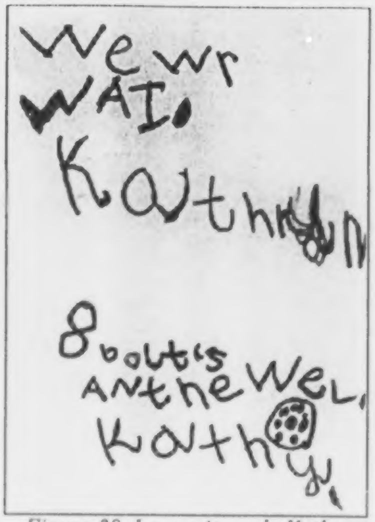


Figura 28. La escritura de Kathy.

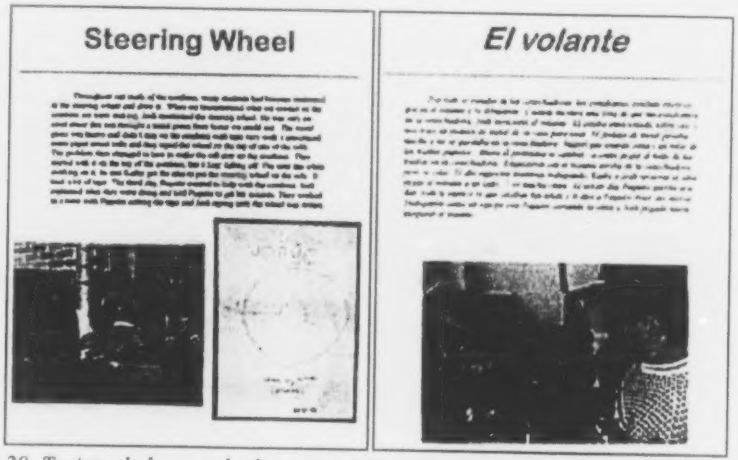
Envolver niños con necesidades especiales

Uno de los aspectos que me dio más gusto de usar el método llamado proyecto con mi clase fue la participación de Paquito, un niño con necesidades especiales. Paquito está clasificado como niño con necesidades especiales severas y necesita una ayudante para el salón de clase todo tiempo. Sus habilidades verbales están al nivel de un niño mayor de dos años o un niño menor de tres años. Su lenguaje receptivo es más grande que su lenguaje expresivo. Hay unas palabras que usa a menudo para expresar sus deseos o necesidades, como "baño," o "maestra." Es común cuando le hacemos una pregunta o tiene que hacer una decisión, él nos repite la pregunta pero no contesta verbalmente.

Sabía que algunos aspectos del método llamado proyecto podría beneficiarle, incluyendo las visitas al campo y la investigación a mano; todavía había otras áreas del trabajo del proyecto y su participación que me preocupaban, como hacer preguntas, o las decisiones hechas por los niños sobre el evento culminante. Paquito participó completamente durante nuestras visitas al campo, y con asistencia podía hacer los papeles de tarja para varias partes del tractor. Hizo diccionarios con nuestra clase, en los cuales copiaron palabras que querían deletrear para el proyecto de una pared de palabras e hizo dibujos de cada palabra. Cuando decidieron lo que querían estudiar en la visita a la agencia de tractores, Paquito tenía la habilidad de apuntar al dibujo de un volante. Sin embargo, luego cuando decidieron firmar para equipos para la construcción de la cosechadora, Paquito no escogió ningún equipo.

Durante el tiempo de centros en nuestra clase, los niños quienes habían firmados para construir una pieza de nuestra cosechadora fueron al centro del juego dramático para empezar la construcción. Otros niños, los cuales estaban en equipos que no eran necesarios para la construcción en ese momento, simplemente me dijeron otro centro en cual querían jugar ese día. Cuando fue el turno de Paquito, él escogió ir a la cosechadora. Yo no estaba segura sobre dejarlo ir. Estaba preocupada que no supiera como hacer o las reacciones de otros niños con su presencia en este centro durante la construcción. Al final, decidí que no era justo no dejarlo ir y le permití ir al centro.

Estaba tan contenta ver que Josh, otro niño en la clase, cuidaba de Paquito. Josh intentaba pegar con cinta su volante a un lado de la cosechadora. Josh le dijo a Paquito que fuera por sus tijeras, y luego le enseñó donde necesitaba cortar. Josh y Paquito trabajaron juntos por casi 20 minutos, cortaron la cinta y juntaron el volante de la cosechadora. ¡Paquito no sólo tuvo la oportunidad de participar en la construcción, él construyó la parte exacta que le interesaba durante la visita a la agencia de los tractores! Conté esta historia a los padres por las tarjetas exhibidas en la cosechadora para la Noche de la Familia.


Steering Wheel

El volante

Figura 29. Tarjeta de la cosechadora que cuenta como Paquito y Josh hicieron el volante.

Evaluación por la maestra sobre el proyecto

Por el proyecto de la cosechadora, aprendí muchas cosas sobre el proceso de hacer un proyecto. El tópico de cosechadora y la maquinaria del cultivo fue un tópico apropiado, ambos tuvo un significado adecuado a sus vidas. Ciertamente reflejaba los antecedentes de mis estudiantes en Iowa rural. Cuatro de los niños en mi clase son de familias granjeras. Además, el tópico tuvo éxito porque ocurrió durante la temporada de cosechar. Los niños podían observar la maquinaria cultivando y trabajando en todo su alrededor. También, el tópico funcionaba bien porque hay muchas cosas para los niños dibujar y examinar en las cosechadoras. Fue un tópico muy concreto para ellos.

Los niños aumentaron mucho del conocimiento sobre el área que yo esperaba. Los objetivos de matemáticas y literatura se integraron fácilmente con nuestro trabajo del proyecto. La única área que hubiera gustado hacer más afonda fue sobre los productos actuales de las semillas de soja y elote en Iowa. Recibimos crayones del Consejo de la Promoción de Semillas de Soja en Iowa, pero me hubiera gustado traer otros productos, como aceite, para que lo pudieron ver. Enseñar los productos les hubiera ayudado a completar el proceso de la cosecha en la mente, si pudiera ver el resultado final. Además los productos me hubieran ayudado a introducir más objetivos de ciencia y los estudios sociales. Desde el principio del proyecto, hice la integración de objetivos curriculares de literatura y matemáticas una prioridad. A pesar del hecho que hubiera podido incluir más objetivos en otros disciplinas, sobre todo, al final del proyecto estaba contenta de ver a tantos objetivos logrados.

Me da gusto ver como el método llamado proyecto funciona en las consideraciones especiales de un salón de clase en un programa bilingüe. Las experiencias a mano suministraron un antecedente rico para el desarrollo del vocabulario en un segundo idioma. Había mucha motivación, en los niños hispanohablantes y los hablantes de ingles, entender lo que les estaba leyendo cuando tenía que ver con las cosechadoras. Me fijé en un nivel más alto de la comunicación entre los dos grupos de niños. Este nivel de comunicación fue especialmente alto durante la construcción de su cosechadora. Un joven hablante de ingles, por ejemplo, quería estar seguro que su compañero hispanohablante sabía que hacer pues dijo: "Go get your tijeras" (Vete para tus....). Cuando los niños planearon hacer preguntas de un experto en su segunda idioma, trabajaban con esfuerzo de pronunciar las palabras cuidadosamente para que les entendieran. Además, me fijé en los padres de idiomas diferentes comunicándose sobre el trabajo de sus hijos durante la Noche de la Familia - más que en los otros eventos entre la casa y la escuela.

Durante el proyecto de la cosechadora, tuve la oportunidad de adquirir nuevo conocimiento sobre las fases individuales del método llamado proyecto. Aprendí que durante la primera fase, mientras que intentaba escribir el conocimiento anterior de los niños, muchas veces cambian a generar preguntas. Hubiera podido escribir sus preguntas en otro pedazo de papel al mismo tiempo estaban haciendo el cuadro sinóptico, en vez de esperar a registrar sus preguntas más tarde. En la Fase II, experimenté los beneficios de hacer una visita preeliminar antes de llevar a toda la clase. Creo que hacer una visita primero resultó en una mejor experiencia para los niños. En la Fase III, incorporé más a los niños en planear los eventos que había hecho en proyectos anteriores. Por haberlos incluido más en la planificación, los niños se animaron más sobre la Noche de la Familia y esta emoción contribuyo a la asistencia de muchas familias.

En conclusión

El proyecto de la cosechadora nos hizo pensar tanto a mi como a mis estudiantes. Empecé a sentir que algo excepcional ocurría en mi salón de clase después de participar en una conversación durante el almuerzo. Unos de mis colegas se quejaban sobre la emoción de los niños por sus vacaciones del Día de Acción de Gracias. Comenté que mis estudiantes no estaban tan inquietos y emocionados para el día festivo este año. Otra maestra, quien tiene una nieta en mi clase comentó, "Les digo por que están emocionados tus niños - ¡ese proyecto tuyo de la cosechadora!" ¡Qué cosa maravillosa es estar emocionado sobre aprender e investigar en el kindergarten!

Author Information

Rebecca Wilson enseña en un programa bilingüe en la escuela de West Elementary en West Liberty, Iowa. El programa se enfoca en mantener su idioma nativo mientras aprenden un segundo idioma. El programa incluye a los estudiantes desde el pre-kinder hasta el cuarto grado. Rebecca tiene un título doble de la educación y el español de la Universidad del Norte de Iowa. Sigue aprendiendo sobre el método llamado proyecto y como usar lo en su salón de clase.

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Para más información sobre el método llamado proyecto, favor de visitar http://ericeece.org/project.html

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EARLY CHILDHOOD
RESEARCH &
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The Combine Project: An Experience in a Dual-Language Classroom

Transcript of Video Clip 1

MR. DANNER: And this is some of the equipment that we use to do it. And this is one of the farms that we do it on. We've got many farms around in the area. This is the truck that we use to haul the grain away to take it to a bin.

TEACHER: … ponen el grano despues de recojerlo y lo ponen alli para llevarando en esta carte en este combino grande.
(… they put the grain after harvesting it and they put it there for carrying it in this bin in this big combine.)

MR. DANNER: We raise different kinds of grain. We raise soybeans.. . . We raise corn. It takes it in through here. This goes to the ground. It lowers and it's got a whole bunch of knives out in front here that cuts it off. And this thing helps push it in. It pushes it in the machine. And gathers it all to the center and pushes it through. Then the combine smashes the plant and rolls it. And inside these—we call these pods. Inside there's beans in there. . . . The machine separates it. We've got a whole bunch of them.

TEACHER: Can you pass it? Pass it to another person.

CHILD: There's a whole bunch of them.

TEACHER: Go up and see if you can get some of the beans. . . . It's OK. There's some in there.

TEACHER: What is in your hand? Can you tell …?

CHILD: Soybeans.

TEACHER: What do they grow in? A bean pod?

CHILD: Yeah.

TEACHER: Let's come sit back down. Now that you've got your beans, sit back down, so we can …

CHILD: I've only got one of them.

TEACHER: That's OK.

TEACHER: We're going to sit back down and see what else …

CHILD: I want my beans back.

MR. DANNER: This is feed for next year.

TEACHER: OK, he was right that they use some of them for planting.

TEACHER: What do you think they use these for?

MR. DANNER: Some of them … you'll find that when you go to the grocery store, like vegetable oil. The beans, when they process them, they get oil, vegetable oil out of them. So a lot of your vegetable oils come from soybeans. It's used for proteins for animals.

TEACHER: Do animals eat it?

MR. DANNER: Yes.

TEACHER: So sometimes animals eat it. A veces los animales lo comen. A veces hacen cosas como aceite. Hacen aceite.
(Sometimes animals eat it. Sometimes they make things like oil. They make oil.)

MR. DANNER: Some of these are for human consumption. For soy milk or soy burgers. Some beans are used for … they're using soybeans to make diesel fuel now. And certain oils. There's many, many uses for soybeans. I don't even know them all.

[The combine goes across the field. The children follow.]

CHILD: The dust is in our eyes already.

TEACHER: That's OK.

[The combine comes to a stop, and Mr. Danner climbs down.]

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The Combine Project: An Experience in a Dual-Language Classroom

Transcript of Video Clip 2

[Mr. Danner gets down from the tractor after driving it across the field.]

TEACHER: That was cool, wasn't it? Did you see it move? Did you see the teeth move?

[The children talk. Mr. Danner explains the operation of the combine. The children gather around buckets of corn.]

TEACHER: Take a big step back so we can explain what it is. Big step back.

TEACHER: Eso es que se llama maiz blanco.
(That's what's called white corn.)
That's what you just looked for?

MR. DANNER: That's what was in those pods. And that's yellow corn for livestock.

TEACHER: Eso no se come la gente. No se come la gente. Se comen los animales esto.
(People don't eat that. People don't eat it. Animals eat that.)

CHILD: I want to eat this.

TEACHER: We're not going to eat it. We're just feeling it right now.

TEACHER: Ya contaron todas las ruedas? Que mas van a contar?
(Did you count all the wheels? What else are you going to count?)

CHILD: Las luces.
(The lights.)

TEACHER: … contar la luz despues?
(…counting the lights after?)

MR. DANNER: You guys want to look inside?

[The children count the parts of the combine: wheels, headlights, etc.]

CHILD: Una …
One, two…
I made eight of them.

TEACHER: Muy bien. Donde estás? (Very good. Where are you?) Oh, there you are. Y las luces? (And the lights?)

CHILD: Now do we get to count the lights?

[Children take notes and make drawings.]

Que ???? adentro?

MR. DANNER: These lights going out to the side show you where your last mark has been when you're doing spring work out in the field. That's the benefit of them. Then there's the light at the end of the auger up there that helps you when you're unloading into the trucks.

TEACHER: There's the lights flashing.

MR. DANNER: It lights up and lets you know how full the truck is.

OTHER FARMER: Did he explain how you drive along side and pick up the beans?

MR. DANNER: No, not really.

TEACHER: Do you know what this tractor is for?

CHILD: Yeah.

TEACHER: What?

[Child answers.]

TEACHER: That's right, in the back wagon, right?

OTHER FARMER: The combine doesn't have to stop moving. This cart can pull along side while the combine is going through the field, and the combine dumps his load onto this cart here. And then this'll take it to the truck.

TEACHER: Did you know that? That's how they did it? You want to get down so somebody else can get up?

CHILD: I found all of them.

OTHER FARMER: Show them where the horn's at. They can each honk the horn.

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Reggio Emilia
Recent Citations from the ERIC Database

ERIC Documents

ED447971 PS029100
Title: **Reggio Emilia: Catalyst for Change and Conversation. ERIC Digest.**
Author(s): New, Rebecca S.
Source: ERIC Clearinghouse on Elementary and Early Childhood Education, Champaign, IL
Sponsoring Agency: Office of Educational Research and Improvement (ED), Washington, DC. (EDD00036)
Publication Date: 2000
Available from: EDRS Price MF01/PC01 Plus Postage.
Document Type: ERIC product (071); ERIC digests in full text (073)
International perspectives on the care and education of preschool children that seem to be of greatest interest in the United States are those directly linked to prevailing concerns in American early childhood education. In this context, many early childhood specialists have explored the implications of Reggio Emilia's work for the theory, practice, and improvement of U.S. early childhood education. This digest outlines the history of Reggio Emilia's early childhood programs in order to provide insights to educators in the United States; the digest highlights some of Reggio Emilia's less visible contributions, particularly its role in promoting discourse among communities of adults in the United States, as they debate the meaning and significance of their work with young children. Also discussed is Loris Malaguzzi's influence in bringing together Italian early childhood educators to share and debate the merits of their diverse approaches to creating environments for young children. The digest concludes by noting that while it is premature to make claims about the influence of Reggio Emilia's example on children's lives, there is little question that the field of early childhood education, including teacher education, has been altered by the exchanges taking place with Italian colleagues. As a result of these cross-cultural conversations, some educators have begun to use Reggio Emilia as illustrative of how nations might best respond to children's development and learning potentials-in particular, Reggio Emilia's emphasis on local processes of knowledge construction. (LPP)
Descriptors: *Early Childhood Education; Educational Environment; Educational

Philosophy; Educational Practices; Foreign Countries; *International Communication; International Educational Exchange; Preschool Curriculum; *Reggio Emilia Approach; *Young Children
Identifiers: ERIC Digests; Italy (Reggio Emilia)

ED439853 PS028525
Title: **Dynamic Aims: The Use of Long-Term Projects in Early Childhood Classrooms in Light of Dewey's Educational Philosophy.**
Author(s): Glassman, Michael; Whaley, Kimberlee
Source: Early Childhood Research & Practice, v2 n1 Spr 2000 Pages: 19
Publication Date: 2000
Notes: In: ECRP, Volume 2, Number 1; see PS 028 521.
ISSN: 1524-5039
Available from: EDRS Price MF01/PC01 Plus Postage.
Availability: For full text: http://ecrp.uiuc.edu/v2n1/print/glassman.html.
Document Type: Journal articles (080); Opinion papers (120)
Geographic Source: U.S.; Ohio

This paper explores the use of the long-term project as an educational tool in early childhood classrooms. In particular, it focuses on the way in which long-term projects can reflect John Dewey's notion of the "dynamic aim" as a primary force in education. In "Democracy and Education," Dewey suggests that when teaching is dominated by specific goals, the educational process becomes static, and there is an unnatural separation between the activity the student engages in to reach the goal and the goal itself. Thus, the activity has no educational purpose beyond reaching this goal and does not teach the student how to learn beyond this very specific situation. Dewey suggests instead that education be based on a series of dynamic aims. The aims of the activity emerge from the activity itself, and they serve only as temporary beacons for the activity. As soon as an aim is achieved, that achievement creates activity leading to another aim. Long-term projects can be perfect vehicles for this type of approach to education. In particular, the paper focuses on the Reggio Emilia approach to long-term projects, which includes some important attributes such as documentation and "progettazione" (i.e., a discussion of the possible directions that the project might take based on observations of the children and past experience). The paper concludes with examples of long-term projects partially based on the Reggio Emilia approach from two American classrooms-one infant/toddler and one preschool. (Author/LPP)

Descriptors: Active Learning; Discovery Learning; Educational Objectives; Educational Philosophy; Experiential Learning; Preschool Education; *Reggio Emilia Approach; Student Centered Curriculum; *Student Projects; Teacher Role; Teaching Methods; *Young Children
Identifiers: *Dewey (John); *Project Approach (Katz and Chard)

ED429685 PS027441
Title: **The Hundred Languages of Children Exhibition: A Unique Early Childhood Education Professional Development Program. Final Evaluation Report (September 15 to December 15, 1998).**
Author(s): Abramson, Shareen; Huggins, Joyce M.
Author Affiliation: California State Univ., Fresno. Early Education Center.(BBB35483)
Pages: 119

Publication Date: February 25, 1999
Notes: Contains many pages of color photographs that may not reproduce well.
Available from: EDRS Price MF01/PC05 Plus Postage.
Document Type: Reports-Evaluative (142)
Geographic Source: U.S.; California
The "Exhibition of the Hundred Languages of Children" (HLC) was organized in the early 1980s by the early childhood schools in Reggio Emilia, Italy to promote the study of their educational methods and to reveal the potential of young children for learning and creative expression. This report details an evaluation of the exhibition and continuing education program held during the exhibition in 1998 at California State University in Fresno, California, "Making Connections to Reggio Emilia and Beyond: An Educational Institute." The institute consisted of four weekend courses taught by leading authorities in early childhood education. Attendees were also able to observe in the Huggins Center, a model training, demonstration, and research center in early childhood education using an exemplary curriculum influenced by the study of the Reggio Approach. The evaluation findings indicated that the HLC exhibition and the program generated an intense and a positive public response throughout the state. Feedback on the exhibit, institute, and tours was exceptionally positive and enthusiastic. The report notes that the program was successful because it provided early childhood education (ECE) training aligned to the mission and goals for ECE in the county offices of education, school districts, and other early childhood education agencies and organizations. The resulting collaboration provided needed financial resources, assisted in publicity efforts, encouraged greater participation of those interested in ECE, and led to greater public awareness of the importance and benefits of ECE. Included in the report are numerous photographs from the exhibit and institute, attendee information, and media information related to the event. (KB)
Descriptors: *Continuing Education; Early Childhood Education; *Faculty Development; *Preschool Teachers; Program Evaluation; Teaching Methods
Identifiers: Project Approach (Katz and Chard); *Reggio Emilia Approach

ED442664 SE063793
Title: **Early Childhood Science: Adopting the Reggio Emilia Approach.**
Author(s): Desouza, Josephine M. Shireen
Pages: 10
Publication Date: 1999
Available from: EDRS Price MF01/PC01 Plus Postage.
Document Type: Opinion papers (120); Reports-Descriptive (141)
Geographic Source: U.S.; Indiana
This paper describes the Reggio Emilia Approach and recommends adopting the curriculum for teaching science in U.S. schools. The underlying philosophy of this approach is its uniqueness within the constructivist paradigm and its potential as an exemplary early childhood program that can be adapted to teach young children science. The educators and parents at Reggio, through a strong commitment and cooperation, have developed an excellent program over the years that has been exemplary not only for educators in Italy and Europe, but has also made a tremendous impact on early childhood education in the United States. The Reggio school uses an integrated curriculum that combines cognitive/symbolic processes in learning. (YDS)
Descriptors: Community Role; *Constructivism (Learning); Early Childhood Education; Educational Environment; Inservice Teacher Education; Integrated Curriculum;

Learning Processes; Parents; *Reggio Emilia Approach; *Science Education; Teachers
Identifiers: Dewey (John); Italy; Piaget (Jean); Vygotsky (Lev S)

ED428890 PS027474
Title: **Editing: Permission To Start Wrong.**
Author(s): Clemens, Sydney Gurewitz
Source: Early Childhood Research & Practice, v1 n1 Spr 1999 Pages: 11
Publication Date: 1999
Notes: Contained in PS 027 470.
Available from: EDRS Price MF01/PC01 Plus Postage.
Document Type: Journal articles (080); Opinion papers (120)
Geographic Source: U.S.; California
This article asserts that young children and their teachers benefit when they learn a work style that includes successive approximations before reaching a final product. These successive attempts can be thought of as editing, and the article describes how the Reggio Emilia approach offers patterns to help children achieve this style of work. The article discusses how a drawing done by a group of children offers an example of a task that can incorporate editing-through revisiting of what has been drawn, translation into other media or "languages," and development of consensus among the children on how to improve it. The article concludes that teachers should strive to free children from the burden of instant perfectionism so that they can instead develop skills in investigation, communication, and creativity. Contains 11 references. (Author/EV)
Descriptors: Childhood Needs; Early Childhood Education; *Editing; Instructional Innovation; Learning Processes; Teaching Methods
Identifiers: *Reggio Emilia Approach

ED432362 PS027532
Title: **Unpacking Educational Environments: Visions from Reggio Emilia, Australia, Sweden, Denmark and the United States. A Selection of Papers Presented at the Conference** (Institute of Early Childhood, Macquarie University, North Ryde, New South Wales, Australia, May 16, 1998).
Author(s): Fleet, Alma, Ed.; Robertson, Janet, Ed.
Author Affiliation: Macquarie Univ., North Ryde (Australia). Inst. of Early Childhood.(BBB33102)
Pages: 37
Publication Date: May 16, 1998
Available from: EDRS Price MF01/PC02 Plus Postage.
Document Type: Collected works-General (020)
Geographic Source: Australia; New South Wales
These four early childhood education conference papers discuss ideas and themes to create healthy educational environments inspired by preschool sites in Reggio Emilia, Italy. The first paper, "Environmental Visions: Daisies and the Possible" (Alma Fleet and Janet Robertson), discusses the influences of Reggio Emilia. The paper notes how the environment of a center should fit its image of children: as learners and researchers; in constant relationship with their surroundings; as being capable of long investigation of media; as being able to solve important problems; as social beings; as entitled to beauty; as welcome; and as engaged in learning. The second paper, "Melbourne via Reggio Emilia" (Kerrie Trebilcock), concerns the culture of a private early childhood

center in Melbourne, Australia. The paper notes how the center's culture was presented through its physical environment such as interior and exterior architecture and design, and suggests that the design of early childhood centers should: create a conducive environment for learning; provide children with a sense of achievement and ownership in the environment; and allow children a degree of freedom. The third paper, "Packing the Suitcase: What To Pack?" (Margo Hobba and Tony Hobba), presents the authors' experiences designing an early child care center in Geelong, Australia, inspired by their Reggio Emilia experience. The fourth paper, also titled "Melbourne via Reggio Emilia" (Diane Bourke), concerns refurbishment of the Junior School of Melbourne Girls Grammar in Australia. Includes a profile of conference speakers. (LBT)
Descriptors: Classroom Design; *Early Childhood Education; *Educational Environment; *Educational Facilities Design; Foreign Countries; Program Design; Young Children
Identifiers: Australia (Melbourne); Early Childhood Centers; *Italy (Reggio Emilia); *Reggio Emilia Approach

ED425855 PS027226
Title: **The Hundred Languages of Children: The Reggio Emilia Approach-Advanced Reflections**. Second Edition.
Author(s): Edwards, Carolyn, Ed.; Gandini, Lella, Ed.; Forman, George, Ed.
Pages: 500
Publication Date: 1998
ISBN: 1-56750-311-X
Available from: EDRS Price MF2 Plus Postage. PC Not Available from EDRS.
Availability: Ablex Publishing Corporation, P.O. Box 5297, 55 Old Post Road #2, Greenwich, CT 06831; Tel: 203-323-9606; Fax: 203-357-8446 (Cloth: ISBN-1-56750-310-1, $73.25; Paper: ISBN-1-56750-311-X, $39.50).
Document Type: Collected works-General (020); Reports-Descriptive (141)
Geographic Source: U.S.; Connecticut
This collection of essays and interviews documents the unique approach to early childhood education taken by schools in the Reggio Emilia region of Italy. Howard Gardner and David Hawkins provide reflections in chapters that begin the book. The book is then divided into four major parts. Part I includes an introduction by Carolyn Edwards and others, and the essay "What Can We Learn from Reggio Emilia?" (Katz). Part II contains six interviews conducted by Lella Gandini with Reggio Emilia educators: "History, Ideas, and Basic Philosophy," with Loris Malaguzzi; "The Community-Teacher Partnership in the Governance of the Schools," with Sergio Spaggiari; "Projected Curriculum Constructed through Documentation-'Progettazione,'" with Carlina Rinaldi; "The Role of the 'Pedagogista,'" with Tiziana Filippini; "The Role of the 'Atelierista,'" with Vea Vecchi; and "The Voice of Parents," with Gianna Fontanesi and others. Part III examines the theory and practice of the Reggio Emilia approach through seven essays: "Educational and Caring Spaces" (Gandini); "Partner, Nurturer, and Guide: The Role of the Teacher" (Edwards); "Children with 'Special Rights' in the Preprimary Schools and Infant-Toddler Centers of Reggio Emilia" (Smith); "Curriculum Development in Reggio Emilia: A Long-Term Curriculum Project about Dinosaurs" (Rankin); "Negotiated Learning through Design, Documentation, and Discourse" (Forman and Fyfe); "Theory and Praxis in Reggio Emilia: They Know What They Are Doing, and Why" (New); and "Poppies and the Dance of World Making" (Kaufman). Part IV examines the extension of the Reggio Emilia approach to American

classrooms through eight essays: "The Child in Community: Constraints from the Early Childhood Lore" (Nimmo); "Existing Frameworks and New Ideas from Our Reggio Emilia Experience: Learning at a Lab School with 2- to 4-Year-Old Children" (Kantor and Whaley); (3) "Bridge to Another Culture: The Journey of the Model Early Learning Center" (Lewin and others); "The City in the Snow: Applying the Multisymbolic Approach in Massachusetts" (Forman and others); "Looking in the Mirror: A Reflection of Reggio Practice in Winnetka" (Tarini and White); "The Project Approach Framework for Teacher Education: A Case for Collaborative Learning and Reflective Practice" (Moran); "Adapting the Reggio Emilia Approach: Becoming Reference Points for Study and Practice" (Fyfe and others); and "Reconsidering Early Childhood Education in the United States: Reflections from Our Encounters with Reggio Emilia" (Phillips and Bredekamp). The book concludes with reflections by Edwards, Gandini, and Forman; a glossary of terms used by Reggio Emilia educators; and a list of published resources about the Reggio Emilia approach. (LPP)
Descriptors: *Art Education; Community Role; Creative Development; *Curriculum Development; Educational Innovation; Educational Theories; Foreign Countries; *Preschool Children; Preschool Education; Progressive Education; Student Projects; Teacher Role; Teaching Methods
Identifiers: *Italy (Reggio Emilia); *Reggio Emilia Approach; United States

ED426755 PS026316
Title: **Innovations in Detroit Head Start.** {Videotape}.
Author Affiliation: Merrill-Palmer Inst., Detroit, MI.(MVK48525)
Pages: 0
Publication Date: 1997
Available from: Document Not Available from EDRS.
Availability: Merrill-Palmer Institute, Wayne State University, 71-A East Ferry Avenue, Detroit, MI 48202; Tel: 313-872-1790; Fax: 313-577-0995 (16-minute VHS video, $35, includes shipping and handling).
Document Type: Non-print media (100)
Geographic Source: U.S.; Michigan
The Reggio Emilia approach to early childhood teaching is based on curriculum and teaching practices developed in the preschools of Reggio Emilia, Italy. This video highlights an ongoing Detroit, Michigan Head Start staff development project, inspired by the Reggio Emilia approach. The staff development program was launched in consultation with Reggio Children, and is sponsored by the Merrill-Palmer Institute of Wayne State University and the Head Start Division of the Detroit Human Services Department. The 16-minute video is organized around the principles of the Reggio Emilia approach, including focus on children's self expression through graphic representation, language, movement and music; teachers as partners in learning through children's interest and curiosity; expanding the environment to allow children to pursue interests, and the project approach, whereby children explore a topic over an extended period of time. The video focuses largely on the impact of the program on the teachers, and features their reflections concerning the Reggio principles and the teachers' experiences in adapting them to the Head Start program. The importance of time in children's learning, the role of the parent, and collaboration of the program's teachers are also highlighted. Also featured are vignettes of the children engaged in a variety of interesting classroom situations and the impressions of some of the parents with children in the program. (HTH)

Descriptors: Childhood Needs; Classroom Environment; *Educational Change; Parent School Relationship; Preschool Education; Preschool Teachers; *Staff Development; Teaching Methods; Time Factors (Learning)
Identifiers: Michigan (Detroit); *Project Head Start; *Reggio Emilia Approach

ED413036 PS023951
Title: **Bringing Reggio Emilia Home: An Innovative Approach to Early Childhood Education.**
Author(s): Cadwell, Louise Boyd
Pages: 160
Publication Date: 1997
Notes: Foreword by Lella Gandini.
ISBN: 0-8077-3660-00-8077-3661-9
Available from: Document Not Available from EDRS.
Availability: Teacher's College Press, 1234 Amsterdam Avenue, New York, NY 10027; phone: 800-575-6566 (Cloth: ISBN-0-8077-3661-9, $43; Paper: ISBN-0-8077-3660-0, $19.95).
Document Type: Opinion papers (120); Reports-Descriptive (141)
Geographic Source: U.S.; New York
This book is a collection of stories describing the Reggio Emilia approach to early childhood education, based on the author's internship in the Italian preschools and a 4-year adaptation effort in one American school. The book's prologue describes the author's work before using the Reggio Emilia approach, the history of Reggio Emilia, the fundamentals of the approach, and the College School of Webster Groves, Missouri where the approach was adapted to a U.S. setting. Chapter 1, "The Journey," details the initial exposure to the Reggio approach, securing an internship, and typical days in the Diana School in Italy. Chapter 2, "The Pleasures and Power of Playing with Materials," discusses the variety of materials available to students and tells stories describing projects children use to build an expanding awareness and understanding of the natural world. Chapter 3, "The Children and the Trees," describes how Reggio Emilia educators define and develop projects, and conveys the story of the children's study of trees and plants. Chapter 4, "Returning Home to St. Louis," describes the move to St. Louis to adapt the Reggio Approach for use in the College School, the importance of spoken language and conversations with children, and the use of visual arts. Chapter 5, "Transforming Space, Time, and Relations," deals with structural and other changes in the preschool space and working with colleagues and parents. Chapter 6, "The Children and the Garden," describes a project on plants which extended from preschool through kindergarten, conversations around the project and grow table designs, children's journals, and sculptures. (Contains 46 references.) (KB)
Descriptors: Childrens Art; Childrens Writing; Classroom Design; *Early Childhood Education; Educational Environment; *Educational Innovation; Foreign Countries; Instructional Materials; Journal Writing; Language Skills; Learning Activities; Personal Narratives; Plants (Botany); Teacher Student Relationship; *Teaching Methods; Visual Arts; Young Children
Identifiers: Italy (Reggio Emilia); Project Approach (Katz and Chard); *Reggio Emilia Approach

Journal Articles

EJ603940 PS530500
Title: **Six Head Start Classrooms Begin To Explore the Reggio Emilia Approach.**
Author(s): Gillespie, Catherine Wilson
Source: *Young Children*, v55 n1 p21-27 Jan 2000
Publication Date: 2000
ISSN: 0044-0728
Document Type: Journal articles (080); Reports-Descriptive (141); Reports-Evaluative (142)
Documents the process of exploring the Reggio Emilia approach in Head Start classrooms in Iowa. Describes areas of exploration, including revising the classroom environments and daily schedules, using more documentation, instituting child-initiated projects, and collaborating on a deeper level with colleagues. Includes excerpts from children's project discussions and a list of resources. (KB)
Descriptors: Classroom Environment; Cooperation; Documentation; *Early Childhood Education; Educational Change; Interprofessional Relationship; *Preschool Curriculum; Program Descriptions; Program Implementation; *Reggio Emilia Approach; Resources; Scheduling; Student Projects; *Young Children
Identifiers: *Project Head Start

EJ603901 PS530450
Title: **"The Hundred Languages of Children: The Reggio Emilia Approach-Advanced Reflections, 2nd Edition."** Book Review.
Author(s): Krechevsky, Mara; Stork, Janet
Source: *Early Childhood Research Quarterly*, v14 n2 p275-79 1999
Publication Date: 1999
Notes: Reviews book edited by Carolyn Edwards, Lella Gandini, and George Forman.
ISSN: 0885-2006
Document Type: Book/product reviews (072); Journal articles (080)
Notes that second edition of "The Hundred Languages of Children" emphasizes rethinking images of adults as teachers, parents, and citizens; highlights the role of documentation; and adds chapters offering reflections related to negotiated learning, professional development and policy, and cultural assumptions about children and society. Identifies redundancies related to the storytelling format and the need for more careful editing. (KB)
Descriptors: Book Reviews; *Early Childhood Education; Personal Narratives; *Preschool Education; Program Descriptions; *Reggio Emilia Approach; *Young Children

EJ608564 PS530522
Title: **The Rabbit Habitat-Documenting a Kindergarten Project.**
Author(s): Kocher, Laurie
Source: *Canadian Children*, v24 n2 p15-22 Fall 1999
Publication Date: 1999
ISSN: 0833-7519
Document Type: Journal articles (080); Reports-Descriptive (141)
Describes effort to restructure instructional design for a kindergarten class to reflect principles of Reggio Emilia approach by listening to children and following their

expressed interest to launch class project. Discusses capturing activities and student thinking using photography and tape recording. Notes the value of documentation to parents, students, and teachers. (DLH)
Descriptors: Action Research; Classroom Research; Documentation; Early Childhood Education; Instructional Design; *Kindergarten; Observation; *Participant Observation; *Reggio Emilia Approach; *Student Projects; Theory Practice Relationship; Young Children

EJ606969 PS530519
Title: **Come, Join the Journey: Bringing Reggio Emilia to the College Community.**
Author(s): Higgins, Mabel F.
Source: *Canadian Children*, v24 n1 p33-40 Spr 1999
Publication Date: 1999
ISSN: 0833-7519
Document Type: Journal articles (080); Opinion papers (120); Reports-Descriptive (141)
Discusses how the Reggio Emilia approach was introduced to college students and faculty, laboratory schools, and the community. Describes field experience courses and curriculum design courses. Discusses the concept of building curriculum from the interests, questions, and problems posed by students. (DLH)
Descriptors: College Students; Curriculum Design; *Curriculum Development; *Reggio Emilia Approach; *Student Centered Curriculum; Student Projects; *Teacher Education

EJ606966 PS530516
Title: **Prepare, Act, Reflect: Intentional Decision Making.**
Author(s): Wainwright, Judy
Source: *Canadian Children*, v24 n1 p9-19 Spr 1999
Publication Date: 1999
ISSN: 0833-7519
Document Type: Guides-Classroom-Teacher (052); Journal articles (080); Opinion papers (120)
Notes that teachers make intentional decisions during interaction with children and reflect on what occurs in the environment. Focuses on teacher behavior along several continua: soft-hard, simple-complex, open-closed, intrusion-seclusion, and high versus low mobility. Illustrates theory with a transcribed observation. Adapts Jones and Prescott's five dimensions of teaching and learning environments as a rating scale. (DLH)
Descriptors: *Decision Making; Early Childhood Education; *Educational Environment; Environmental Influences; Evaluation Methods; Protocol Analysis; Reflective Teaching; *Reggio Emilia Approach; *Teacher Behavior; Teacher Student Relationship

EJ606965 PS530515
Title: **Beyond the Attentive Eye: The Importance of Theory for the Practice of Documentation.**
Author(s): Forman, George
Source: *Canadian Children*, v24 n1 p4-8 Spr 1999
Publication Date: 1999

ISSN: 0833-7519
Document Type: Journal articles (080); Opinion papers (120)
Addresses the documentation of children's work to build reflective practice, aid memory, and support teachers' discourse. Identifies favorite sources for theory, illustrates moving from data to theory, notes that knowledge needs to be indexed for accessibility, recommends combining technique and knowledge, and calls for knowledge exchange among educators in Italy and North America. (DLH)
Descriptors: *Documentation; Early Childhood Education; International Educational Exchange; Reflective Teaching; *Reggio Emilia Approach; Teaching Methods; *Theory Practice Relationship; *Young Children

EJ605471 PS530441
Title: **Further Reflections upon the Applications of the Reggio View in a Kindergarten Classroom.**
Author(s): Gerst, Barbara
Source: *Canadian Children*, v23 n2 p43-48 Fall 1998
Publication Date: 1998
ISSN: 0833-7519
Document Type: Journal articles (080); Opinion papers (120)
Reflects on the author's role as kindergarten teacher in the classroom and the impact of a session on the Reggio Emilia preschools. Focuses on changes in the author's perspectives regarding the roles of teacher, student, and parent and their relationships. Discusses struggles with implementing Reggio inspired projects and the increasing use of large group discussions. (KB)
Descriptors: *Attitude Change; Change Strategies; Group Discussion; *Kindergarten; Kindergarten Children; Parent Role; Parent School Relationship; Parent Student Relationship; Parent Teacher Cooperation; Personal Narratives; *Reggio Emilia Approach; Student Role; *Teacher Attitudes; *Teacher Role; Teacher Student Relationship; *Teaching Methods

EJ605466 PS530436
Title: **Reggio Emilia-An Impossible Dream?**
Author(s): Reynolds, Gretchen
Source: *Canadian Children*, v23 n2 p4-10 Fall 1998
Publication Date: 1998
ISSN: 0833-7519
Document Type: Journal articles (080); Opinion papers (120); Reports-Descriptive (141)
Recounts experiences during a study tour of three preschools in Reggio Emilia, Italy. Describes the environment, activities, and children's interactions at the Allende Infant-Toddler Center and the Neruda and the Diana Schools for 3- to 6-year-olds. Focuses on teachers' observational and pedagogical methods. Concludes that quality education depends on communication, dialogue, and reciprocity. (KB)
Descriptors: Educational Quality; Learning Activities; Peer Relationship; *Preschool Education; Program Descriptions; *Reggio Emilia Approach; *Teacher Student Relationship; *Young Children
Identifiers: Scaffolding

EJ602534 SO532158
Title: **Early Childhood: Where's the Music in "The Hundred Languages of Children?"**
Author(s): Andres, Barbara
Source: *General Music Today*, v11 n3 p14-17 Spr 1998
Publication Date: 1998
ISSN: 1048-3713
Document Type: Journal articles (080); Reports-Descriptive (141)
Describes the Reggio Emilia program in Italy that encourages children to explore their environments through different modes of expression. Addresses why music is not a central aspect of the program and offers a music activity that accords with the Reggio Emilia philosophy emphasizing the need for music in the program. (CMK)
Descriptors: Early Childhood Education; *Educational Philosophy; Foreign Countries; Freehand Drawing; *Music Education; *Parent Role; Program Descriptions; Program Effectiveness; *Reggio Emilia Approach; *Student Centered Curriculum; Teacher Student Relationship; *Visual Arts
Identifiers: Italy (Reggio Emilia)

EJ602081 PS529811
Title: **Questions for Collaboration: Lessons from Reggio Emilia.**
Author(s): Fyfe, Brenda
Source: *Canadian Children*, v23 n1 p20-24 Spr 1998
Publication Date: 1998
ISSN: 0833-7519
Document Type: Journal articles (080); Reports-Research (143)
Identifies questions teachers are learning to ask themselves and each other as they move toward a negotiated, co-constructed and systematic approach that places documentation at the heart of an emergent curriculum. Discusses these questions in terms of documentation, discourse, and design, three components that define a dynamic system of learning seen in the schools of Reggio Emilia, Italy. (TJQ)
Descriptors: *Action Research; *Cooperation; Diffusion (Communication); Discussion; Early Childhood Education; Educational Research; *Evaluation Methods; *Reggio Emilia Approach; *Teacher Researchers; *Theory Practice Relationship
Identifiers: *Collaborative Research; Emergent Curriculum

EJ602080 PS529810
Title: **Towards a Pedagogy of Listening: Impressions of the Centre for Early Childhood Education, Loyalist College, Belleville, Ontario.**
Author(s): Wien, Carol Anne
Source: *Canadian Children*, v23 n1 p12-19 Spr 1998
Publication Date: 1998
ISSN: 0833-7519
Document Type: Journal articles (080); Reports-Descriptive (141)
Highlights impressions of the Centre for Early Childhood Education, the Centre's recent work to interpret the philosophy of the Reggio Emilia approach, and examples of how the centre has transformed its practice within a Canadian context. Relates impressions of their environment, traces several examples in the development of the environment, and describes the staff's ongoing experience with documentation. (TJQ)

Descriptors: *Classroom Environment; Early Childhood Education; Foreign Countries; *Interior Space; Program Development; *Reggio Emilia Approach; *Space Utilization; Teaching Methods
Identifiers: Canada; Child Centered Education; *Learning Environment; Ontario; Transparency Theory

EJ564357 PS527766
Title: **Nurturing the Language of Art in Children.**
Author(s): Dighe, Judith; Calomiris, Zoy; Van Zutphen, Carmen
Source: *Young Children*, v53 n1 p4-9 Jan 1998
Publication Date: 1998
ISSN: 0044-0728
Document Type: Guides-Non-classroom (055); Journal articles (080)
Describes art as a symbolic language as implemented in Reggio Emilia, Italy, preschools and adapted in U.S. schools. Considers the beauty of the classroom environment, use of materials and tools, use of observation of the child as the source of the curriculum, child-centered planning, teacher-child interaction to guide development of graphic representation, scaffolding, and modeling. (KB)
Descriptors: *Art Activities; *Art Education; Art Expression; Art Materials; Modeling (Psychology); Preschool Curriculum; Preschool Education; *Reggio Emilia Approach; Student Centered Curriculum; Teaching Methods; *Young Children
Identifiers: Graphic Representation; Scaffolding

EJ592275 SO531553
Title: **Bringing the Reggio Concept to American Educators.**
Author(s): Davilla, Donna E.; Koenig, Susan M.
Source: *Art Education*, v51 n4 p18-24 Jul 1998
Publication Date: 1998
ISSN: 0004-3125
Document Type: Journal articles (080); Reports-Descriptive (141)
Discusses the Reggio Emilia (Italy) approach to elementary education that uses the child's artwork as a guide to what the child knows, while the teacher acts as a facilitator. Describes a series of workshops that taught elementary educators in Des Moines (Iowa) how to implement this approach into their classrooms. (CMK)
Descriptors: Art Education; *Childrens Art; Community Involvement; Cultural Pluralism; Elementary Education; *Learning Processes; *Reggio Emilia Approach; *Student Evaluation; *Teacher Workshops
Identifiers: *Facilitator Styles

EJ578139 PS528820
Title: **Parental Reactions to the Introduction of the Reggio Emilia Approach in Head Start Classrooms.**
Author(s): McClow, Caitlin Secrest; Gillespie, Catherine Wilson
Source: *Early Childhood Education Journal*, v26 n2 p131-35 Win 1998
Publication Date: 1998
ISSN: 1082-3301
Document Type: Journal articles (080); Reports-Research (143)

Examined through focus groups the feelings and reflections of Head Start parents regarding their initial experiences with the Reggio Emilia approach in their children's classrooms. Findings indicated that (1) parents did not feel comfortable in their knowledge of the Reggio Emilia approach; (2) although parents generally supported the approach, they had concerns-for example, about kindergarten readiness. (EV)
Descriptors: Early Childhood Education; Instructional Innovation; *Parent Attitudes; Teaching Methods
Identifiers: *Project Head Start; *Reggio Emilia Approach

EJ577425 EC620346
Title: **Gifted Education Meets Reggio Emilia: Visions for Curriculum in Gifted Education for Young Children.**
Author(s): Barbour, Nancy E.; Shaklee, Beverly D.
Source: *Gifted Child Quarterly*, v42 n4 p228-37 Fall 1998
Publication Date: 1998
ISSN: 0016-9862
Document Type: Journal articles (080); Reports-Descriptive (141)
Reviews and focuses on a comparison of current curriculum models used in gifted-child education and early childhood education. The Reggio Emilia approach to early childhood education, which emphasizes the child's needs, interests, and abilities as the focus of curriculum development, is described. (CR)
Descriptors: *Curriculum Design; *Curriculum Development; Early Childhood Education; *Gifted; Models; *Student Centered Curriculum; Student Interests; Teaching Methods
Identifiers: *Reggio Emilia Approach

EJ570792 PS528353
Title: **Beginning to Implement the Reggio Philosophy**.
Author(s): Staley, Lynn
Source: *Young Children*, v53 n5 p20-25 Sep 1998
Publication Date: 1998
ISSN: 0044-0728
Document Type: Journal articles (080); Reports-Descriptive (141)
Describes implementation of the Reggio Approach in a university preschool. Summarizes the learning assumptions and teaching methods used. Examines the parent-teacher, teacher-teacher, and teacher-child partnerships; and describes and reflects on student projects related to dinosaurs, kites, castles, princes, and princesses. Discusses the impact on children's learning, topic selection, documentation, and supportive collaboration; and offers suggestions for future implementation. (KB)
Descriptors: Educational Philosophy; *Experiential Learning; Parent School Relationship; *Preschool Curriculum; Preschool Education; Program Descriptions; Program Implementation; Student Projects; Teacher Collaboration; Teacher Student Relationship; *Teaching Methods
Identifiers: Project Approach (Katz and Chard); *Reggio Emilia Approach

EJ567839 PS528011
Title: **The Language of Lines.**

Author(s): Breig-Allen, Cheryl; Hill, Janet; Geismar-Ryan, Lori; Cadwell, Louise Boyd
Source: *Young Children*, v53 n4 p64-66 Jul 1998
Publication Date: 1998
ISSN: 0044-0728
Document Type: Journal articles (080); Reports-Descriptive (141)
Describes a project about lines in the environment used with 2- and 3-year olds and based on the Reggio Emilia approach. Activities included making tracks with riding toys, drawing lines on papers, seeing cloud lines, and making lines with yarn and Cuisenaire rods. Shows how young children's observations and ongoing discoveries can uncover their emerging understanding of the world. (KB)
Descriptors: *Class Activities; *Learning Activities; *Preschool Children; Preschool Education; Program Descriptions; Student Projects
Identifiers: *Reggio Emilia Approach

EJ561686 PS527688
Title: **Jimmy's Journey: Building a Sense of Community and Self-Worth through Small-Group Work.**
Author(s): Elgas, Peggy M.; Peltier, Marla Barber
Source: *Young Children*, v53 n2 p17-21 Mar 1998
Publication Date: 1998
ISSN: 0044-0728
Document Type: Journal articles (080); Reports-Descriptive (141)
Chronicles and reflects on an attempt to implement the Reggio Emilia project approach in an all-day Head Start program. Uses the example of one child, "Jimmy," to discuss how the addition of small group time and project work to the program's curriculum taught children the value of relationships and collaboration. (EV)
Descriptors: Cooperation; Cooperative Learning; Early Childhood Education; *Group Instruction; *Peer Relationship; *Student Projects; Teacher Student Relationship; Teaching Methods
Identifiers: Project Head Start; *Reggio Emilia Approach

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New at ERIC/EECE

New Publications

ERIC/EECE has recently published two new Digests, the spring issue of its newsletter, and issues of the Internet parenting magazine *Parent News*:

ERIC Digests

- *Multiage Grouping and Academic Achievement* by Susan J. Kinsey (HTML | PDF)
- *Assessing the Social Competence of Young Children* by Diane E. McClellan and Lilian G. Katz (HTML | PDF)

Newsletters

- *ERIC/EECE Newsletter*, volume 13, number 1 (HTML | PDF)
- *Parent News*, volume 7, number 1
- *Parent News*, volume 7, number 2

ERIC/EECE Web Sites

Direct Search

The Direct Search Web site is not an ERIC/EECE Web site, but three databases from ERIC/EECE Web sites have recently been added to the compilation of resources on the Direct Search Web site.

The Direct Search Web site, which is maintained at George Washington University, compiles links to the search interfaces of data resources (databases and other types) on Web sites, as opposed to Web pages on Web sites. These are resources that are difficult or impossible to find using general search tools like Alta Vista, Google, or Hotbot, which search Web pages. The authors of Direct Search call these resources that are "hidden" from search tools, the "invisible Web."

The Direct Search Web site seeks to make available the massive amount of information in these data resources. You can browse for these resources in several categories, such as Humanities, Social Science, and Legal; or you can search the compilation using keyword terms. Note that the Direct Search Web site simply points to these resources; it doesn't search the resources themselves.

The Direct Search Web site is available at http://gwis2.circ.gwu.edu/~gprice/direct.htm

The following three databases from ERIC/EECE have been recently included in the Direct Search compilation:

1. NCCIC Child Care Resources Database

The National Child Care Information Center (NCCIC), ERIC/EECE's Adjunct ERIC Clearinghouse on Child Care, has compiled data on child care from various sources and has made these data available in a database on its Web site. The Web site and database are available at http://nccic.org and http://nautilus.outreach.uiuc.edu/eric/search.asp

The database, which was announced in *ECRP* volume 2, number 2 (Fall, 2000), contains resources related to the following topics:

- Child Care and Development Fund (CCDF)
- Temporary Assistance to Needy Families (TANF)
- State Demographics
- Child Care Licensing
- Program Enrollment and Participation
- Professional Development

2. CLAS Materials Database

The Culturally and Linguistically Appropriate Services (CLAS) Institute, another federally funded project with which ERIC/EECE works closely, has acquired a collection of resources related to working with culturally and linguistically diverse populations in early childhood education, particularly in special education contexts. The CLAS staff have reviewed many of the materials in this collection. These reviews, along with additional descriptive and bibliographic information, have been made available in an online searchable database. Some of the materials are available in full text; some of the materials are provided as excerpts. The CLAS Web site and database are available at http://clas.uiuc.edu/ and http://clas.uiuc.edu/search.html

The materials in the database can be searched by subject or keyword, age range of child, format (i.e., printed material, videotape, etc.), author, title, project name, or language.

The CLAS Web site has been noted in previous issues of *ECRP*. Recently the CLAS Web site underwent a slight redesign and reorganization of the sections of the site, with the intent of improving its ease of use.

3. Reading Pathfinder Database

The Reading Pathfinder staff search the Web to locate high-quality resources that may be used to assist children's reading through Grade 3. Information about these resources is included in the Reading Pathfinder online searchable database. A direct link to the Web resource is also provided. The Web site and database are available at http://readingpath.org/ and http://ericps.crc.uiuc.edu/cgi-bin/readpath/searchrp.cgi

The information in the database can be searched by title, keyword, age or education level (e.g., preschoolers), intended audience (e.g., caregivers), setting (e.g., child care center), resource type (e.g., books), or language. The Reading Pathfinder Web site was first announced in *ECRP*, volume 2, number 1 (Spring, 2000).

ERIC/EECE

The full text of the *Proceedings of the Families, Technology, & Education Conference* (October 30-November 1, 1997) has been uploaded to the Web site. This publication can be found at http://ericeece.org/pubs/books/fte/ftepro.html

This publication includes presentations that relate to the following areas:

- the application of technology in education contexts
- equitable use of technology
- technology and exceptional students
- the Internet
- linkages between families and schools.

Facts in Action

ERIC/EECE works with the Early Education Clearinghouse in Boston to sponsor the Facts in Action Web site, which is available at http://factsinaction.org/

Facts in Action is the newsletter of the Early Education Clearinghouse. The Web site provides an online version of the newsletter articles, plus additional resources. The Early Education Clearinghouse, through the newsletter and Web site, seeks to put research-based knowledge and tools into the hands of those who serve in the early childhood field, as well as those who influence or make policy that affects the field.

The Web site contains summaries of recent research, facts and statistics, reports on tools to use in measuring outcomes, and legislative and administrative policy updates. Each newsletter article focuses on key findings and action steps. In other words, the newsletter and Web site seek to help practitioners turn facts into action!

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